

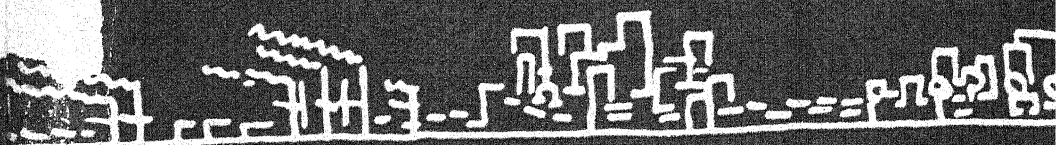
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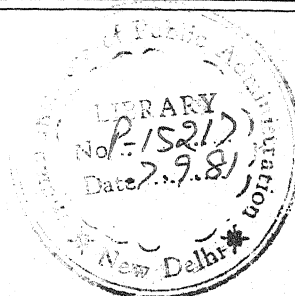
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*Automotive Taxation in the Cities of Developing Countries**

JOHANNES F. LINN

AUTOMOBILE OWNERSHIP and use provide an excellent but much neglected tax base for urban governments in the cities of developing countries (LDCs). The number of automobiles registered in those cities in recent years has grown much faster than city populations, and in all LDCs car ownership is heavily concentrated in the largest cities. Furthermore, the overwhelming proportion of the urban motor vehicle fleet in LDCs consists of automobiles, and these in turn are owned and operated mainly by the upper income classes.¹ Traffic congestion and air pollution are as bad in many of the cities of developing countries as in those of the industrialized nations, and are largely due to automobile traffic and emissions.² These trends, patterns, and problems are likely to become even more pronounced with the rapid expansion in urban areas and with continued increases in incomes in LDCs.

Ownership and use of motor vehicles in LDC cities therefore appear to provide a large, rapidly growing and progressive tax base. Moreover, the costs imposed by motor vehicle users on each other and the rest of the urban community in the form of congestion and pollution call for an imposition of corrective fiscal measures in order to remedy one of the

*This paper was prepared as part of a larger study of urban public finances in developing countries which was carried out by the World Bank under the direction of Roy W. Bahl and of the author of this paper. However, responsibility for the views expressed are entirely those of the author, and do not necessarily reflect the views of the World Bank. The final version of this paper was prepared while the author was on leave from the World Bank as a visiting researcher at the Westfälische Wilhelms-Universität Münster, at the invitation of the Sonderforschungsbereich 26 Raumordnung und Raumwirtschaft.

¹Smith, Roger S. *Highway Pricing and Motor Vehicle Taxation in Developing Countries: Theory and Practice*, Finanzarchiv (N.F.), Vol. 33, 1975, p. 332; See also World Bank, *Urban Transport*, Sector Policy Paper, Washington, D.C., World Bank 1975, Annex. 2.

²Churchill, Anthony, *Road User Charges in Central America*, World Bank Staff Occasional Paper No. 15, Baltimore, The Johns Hopkins Press, 1972, p. 75.

major instances of malallocation of resources in urban areas. Ownership and use of motor vehicles are a uniquely *urban* phenomenon in LDCs, even more than in the industrialized countries. Therefore, special attention needs to be paid to the questions of automotive taxation in LDC cities. Furthermore, the chronic imbalance between fiscal resource needs of urban governments in these cities—an imbalance which, incidentally, is aggravated by the increase in investment and maintenance requirements for street infrastructure and traffic management resulting from the rise in the urban motor vehicle fleets—makes it an urgent proposition to exploit to the fullest possible extent a set of fiscal instruments such as motor vehicle taxation which has the rare potential of providing substantial and buoyant revenues while at the same time improving the allocation and distribution of economic resources.

The purpose of this paper is to substantiate these arguments by exploring detail the potential of automotive taxes as fiscal instruments for urban governments in the cities of developing countries. After a survey of the nature and extent of application of automotive taxes in LDC cities, the major types of these taxes are evaluated in term of their effects on the efficiency and equity of resource allocation, and in terms of their revenue performance and administrative feasibility.

EXISTING URBAN AUTOMOTIVE TAXES IN LDC CITIES

Despite the seemingly excellent case for taxation of urban motor vehicle ownership and use by urban governments, particularly in the large cities of developing countries, urban governments in LDCs are not universally authorized to levy such taxes, or where they possess the necessary taxing authority, they generally have not made a major effort to tap this revenue source to its full extent. Only in two of the thirty major LDC cities reviewed in a recent World Bank study of urban finances were automotive taxes found to contribute more than ten per cent of total local government revenue (Jakarta and Guatemala City),³ and only in five cities did the share of these taxes in total tax revenue of local government exceeded ten per cent (Jakarta, Guatemala City, Teheran, Valencia (Venezuela), and Seoul). Furthermore, it was found that the local expenditures on urban roads by far exceeded local revenues from automotive taxes, with the lone exception of Jakarta, where motor vehicle tax revenues exceeded road-

³Cairo is a third city where automotive taxes apparently have played a major role. According to Robson and Reagan they have contributed as much as 27 per cent of local revenues in certain years. See Robson, William A. and Reagan, D.E., *Great Cities of the World, Their Government, Politics and Planning*, London, George Allen and Unwin, 1972, p. 101.

related expenditures by 120 per cent.⁴

A careful look at the practices in selected countries and cities reveals that local automotive taxation consists of a very heterogeneous set of levies (Table 1). In most cities, where local authorities are permitted to levy automotive taxes, annual license taxes are levied on motor vehicles whose owners reside in the taxing jurisdiction. In some cities a tax is levied with the sale or registration of a motor vehicle. In two cities a local fuel tax is imposed by local governments. Finally, Singapore has made an effort to apply restrictive licenses according to time and area of road usage within the city. Singapore also appears to be the only city in the sample where parking fees have been introduced and collected at more than a nominal level.⁵ Tolls on urban roads are not levied in any of the cities surveyed for this study. Overall, it appears that, while national governments tend to rely more heavily on fuel taxation relative to other forms of automotive taxation,⁶ local governments rely much more frequently on annual license taxes,

The unrestricted local license taxes fall into three major categories: In Guatemala City, in Ahmedabad, and in the Honduran municipalities flat annual taxes are levied, differentiating only by type of vehicle. In Colombian and Korean cities, and in Bombay the tax varies not only with type of vehicle, but also according to weight. In Jakarta, and in the Korean cities the tax varies with type of vehicle and cylinder size. In addition to these three basic types of annual license taxes, there are special features in a number of cities: In Korea, the local license tax is lower for business than for non-business use, and for large cars the tax varies with axle distance. In Bombay, higher taxes apply to vehicles not equipped with pneumatic tires. In Bogota, the license tax declines with the age of the vehicle. Finally, in Colombian and Korean municipalities buses are charged according to the number of seats.

Registration fees and transfer taxes are levied in a number of cities

⁴On economic grounds there is no requirement that total expenditures by an urban government on the urban road network should equal the revenues collected from road users through automotive taxes. However, the revenue shortages of local urban authorities in LDCs, which in part are due to an insufficient use of local taxes on motor vehicles, have led frequently to a poor record on urban road investment and maintenance. For a similar observation for Central America—See Churchill, *op. cit.*, p. 108.

⁵Some local governments also impose other fees related to motor vehicle operation, such as vehicle inspection and drivers license fees. These are not discussed here since they are usually of minor revenue importance and are raised mainly to cover the costs of a particular service (vehicle inspection or driver's test). In some cities it might, however, be possible to use this type of fees, especially an annual inspection fee, to approximate an annual license tax by charging higher rates than necessary for cost recovery. This might be an appropriate approach where outright license taxes cannot easily be imposed due to legal or institutional constraints that cannot be overcome without serious delay or major legislative action by higher-level authorities.

⁶Smith, Roger S., *op. cit.*

TABLE 1 LOCAL MOTOR VEHICLE AND FUEL TAXES IN SELECTED CITIES

Country	City	Fuel Taxes	Annual License Taxes	Registration Fee or Transfer Taxes	Area Licences, Tolls and Parking Fees
(1)	(2)	(3)	(4)	(5)	(6)
Guatemala	Guatemala city (1970) (US \$1=Q1)	Q 0.02 per gallon of gasoline	Passenger Cars: Q 31 Others: n.a.		Parking meters (4500) in central area, charging 10c/h in inner zone, 5c/h in outer zone
Honduras (1970)			Passenger Cars: L 15 Trucks: L 25		
Colombia	(US \$=L2) Cartagena (1973)		Passenger Cars: Col \$72-240 according to weight	Col \$15 per registration	
	(US \$1=Col \$24.9)		Buses: Col \$3.60 per seat Trucks: Col \$60 per ton Motor Cycles: Col \$40 Passenger Cars: Col \$144-600 according to weight		
	Cali (1974)				
	(US \$1=Col \$28.7)		Buses: Col \$12 per seat Trucks: Col \$240 per ton Motor Cycles: Col \$360 Tractors: Col \$600		
	Bogota (1973)	Col \$0.04 per gallon of gasoline	Passenger Cars: Col \$120-480 according to weight	Col \$20 per registration	

India	(US \$1=Col \$24.9)	Bombay (1973) (US \$1=Rs. 7.7)	Buses:	Col \$1.8 per seat	
			Trucks:	Col \$72 per ton	
			Motor Cycles:	Col \$36	
			For vehicles older than three years the tax rate declines 5% for each year, but not below 50%		
			Passenger Cars:	Rs. 100-260	
			Buses:	Rs. 100-260	
			Trucks:	Rs. 180-340	
			Fees for all three types of vehicles vary with <i>weight</i>		
			Motor Cycles:	Rs. 48	
			For vehicles without pneumatic tires higher rates apply		
Indonesia	(US \$1=Col \$24.9)	Ahmedabad (1973) (US \$1=Rs. 7.7)	Passenger cars:	Rs. 108	
			Buses:	Rs. 300	
			Trucks:	Rs. 500	
			Motor cycles:	Rs. 54	
			Automobiles, buses, trucks:		
			Rp. 3,600-96,000		
			3 wheel motor vehicle:		
			Rp. 2,400-9,600		
			Motor cycle:	Rp. 1,200-7,200	
			Fees for all three types vary according to <i>cylinder size</i>		
Korea ^a (1977)	(US \$1=won 484)	Jakarta (1973) (US \$1=Rp. 415)	Passenger cars:		
			Business use: won 16,800-84,000		
			10(5)% on initial (subsequent)/transfer of title, as a portion of assessed value of vehicles		
			Parking fees are imposed in certain locations		

(Continued)

(1)	(2)	(3)	(4)	(5)	(6)
			<p>Other use: won 76,800-1,320,000</p> <p>Fees for both types vary according to <i>distance between axels</i> for cars with more than four cylinders; and according to <i>cylinder capacity</i> for cars with less than four cylinders</p> <p>Bus:</p> <p>Business use: won 21,000-82,000</p> <p>Other use: won 44,000-77,000</p> <p>Fees vary according to number of <i>seats</i></p> <p>Trucks:</p> <p>Business use: won 4,400-24,000</p> <p>Other use: won 19,000-87,000</p> <p>Fees vary according to <i>weight</i></p>		
Iran	Tehran (1973) (US \$1 = R 68.7)			Cars, Taxis, buses: Rs. 3,000 Trucks: Rs. 1,500 per registration	
Singapore (1976)	(US \$1 = S \$2.31)	US \$ 0.42 on gaso- line US \$ 0.03 on		Registration fees are levied and import	Area Licence Fee: S\$60 per month or

duties on cars (1976) \$3 per day for use of central restricted zone
Parking Fees: S\$50-80 per month in central zone for public and commercial parking.

diesel fuel (1969)

SOURCE: 1. Churchill, Anthony, *op. cit.*, and Avenarius, Hermann, Oberndörfer, Dieter, Schmitz, Eric, and Wolff, Jürgen H., *Kommunalverwaltung in Mittelamerika: Eine Studie Über die Hauptstädte Guatemalas und El Salvadors*, Freiburg, Arnold-Bergstraesser-Institute, 1975. 2. Churchill, *op. cit.* 3. World Bank Case Studies on Urban Public Finances: Cartagena. 4. World Bank Case Studies on Urban Public Finances: Cali. 5. World Banks, *op. cit.*: Bogota. 6. World Bank. *op. cit.*: Bombay. 7. World Bank. *op. cit.*, Ahmedabad. 8. World Bank, *op. cit.*, Jakarta. 9. Smith, R.S. and Kim, Chong-In, *Local Finances in Non-Metropolitan Cities of Korea*, World Bank, Forthcoming. 10. Smith, T.R., *op. cit.* 11. Smith R., *op. cit.*, Watson and Holland, *op. cit.*

whenever the title to the motor vehicle changes hands (Bogota, Cartagena, Jakarta), or on initial registration (Teheran). In the Colombian cities the registration fee is nominal (less than US \$ 1) and presumably is intended to reflect only the administrative cost of registration. In Jakarta, however, the registration 'fees' amount to a sizable proportion of vehicle value (10 percent for initial title transfer, and 5 percent for any subsequent transfers). In Teheran a flat charge of approximately US \$ 44 is levied for the initial registration of cars, taxis, and buses (half that amount for trucks).

Local fuel taxes are usually levied on a specific basis and generally apply only to gasoline. A particularly interesting situation existed in the Philippines, where until 1974 cities and municipalities could impose a tax on gasoline at a level up to 25 per cent of the national gasoline tax. In the Manila metropolitan area different percentage rates applied in the various local jurisdictions varying from 0 to 25 per cent of the national tax.

Singapore is the first city in the world that has made an effort to restrain central city congestion by the application of area- and time-specific licenses and parking charges. The scheme was initiated in June 1975 and was monitored extensively by local officials and World Bank staff⁷. It consists in prescribing a restricted zone in the city which includes the most congested central business district. It covers 62 hectares and has 22 entry points. Between 7.30 a.m. and 10.15 a.m. entry into this restricted zone by private automobile is permitted only if the vehicle exhibits a license which is sold as US \$26 a month, or US \$1.30 a day. Buses, commercial vehicles, motorcycles and car pools (*i.e.*, cars carrying four persons or more) are exempt. This scheme was supplemented by a drastic increase in public and commercial parking fees. In addition, fringe parking lots were opened up with park-and-ride schemes to offer motorists an alternative form of transportation.

EVALUATION OF ALTERNATIVE AUTOMOTIVE TAXES

As the preceding section has indicated, there exists a wide range of experiences regarding automotive taxation by urban governments in LDCs despite the fact that (with a few exceptions) these taxes are still underutilized. On the basis of this experience, and as a guide for an expanded use of these taxes, a careful evaluation of the major types of automotive taxes in terms of the objectives of economic policy is now possible. The objectives considered here are as usual the generation of a buoyant and steady stream of public revenue, redistribution of income, administrative feasibility, and an improved allocation of resources.

⁷Watson, Peter L. and Holland, Edward P., *Relieving Traffic Congestion: The Singapore Area License*, World Bank Staff Working Paper No. 281, Washington, D.C., 1978.

The last of these four goals, *i.e.*, the goal of economic efficiency, deserves special attention in the case of motor vehicle taxes in urban areas. The efficiency impact of automotive taxes depends on how far they are able to approximate the marginal costs imposed on society by the use of the motor vehicle. This marginal cost consists of the variable maintenance and pollution costs on uncongested urban streets; on congested urban streets, the marginal social costs of congestion must be added, *i.e.*, the loss in terms of operating costs and time imposed by the additional vehicle on the other road users. If automotive taxes equal these marginal social costs of vehicle operation then they are optimal in terms of efficiency of road use.⁸

Variable maintenance costs of road use, whether in rural or urban areas, depend mainly on the type of road surface, and are significantly higher on unpaved than on paved roads.⁹ Therefore, the use of unpaved roads on efficiency grounds should be taxed at a higher rate than the use of paved roads.¹⁰ Congestion costs vary with time of day and location in the city, and urban road user charges would have to vary accordingly in order to be efficient.¹¹ Air pollution costs are directly related to the amount of fuel consumed, but also to the state of repair of the car, and to climatic conditions, in particular wind and precipitation.

No single automotive tax is likely to approximate these multiple dimensions of road user costs, as well as allow for the other objectives of tax policy, such as revenue performance, equity, and administrative ease. This implies that more than one tax instrument will have to be used in trying to attain the multiple policy goals, and each instrument should be aimed

⁸There are a number of caveats to this basic rule of marginal cost pricing, the best-known of which relates to the 'second-best' problem (for a comprehensive discussion of these issues see Kahn Alfred E., *The Economics of Regulation: Principles and Institutions*, Vol. 1, New York, Wiley, 1970). However, given the gross distortions presently encouraged by the absence of marginal social cost pricing in the case of congested urban roads, there can be little doubt that an approximate application of this pricing rule would improve the allocation of resource.

⁹Estimates by Churchill indicate that the variable maintenance costs on paved, gravel, and dirt roads are in the ratio of 1:11:33 in Central America. Nanjundappa reports that variable maintenance costs on cement paved, bituminous paved, water-bound macadam, and earth roads in India are in the ratio of 1:4:20:34. Other factors influencing variable maintenance costs are the axle weight of vehicles and the type of tire used, in particular whether pneumatic or not.

¹⁰The proportion of unpaved roads can be significant in LDC cities. For Cali it was estimated by city officials that in 1974 approximately 50 per cent of urban streets were unpaved. In Guatemala City the proportion of unpaved streets in the late 1960s was 51 per cent, and in San Jose 21 per cent (Churchill, *op. cit.*, p. 109). The proportion of all traffic that takes place on urban unpaved roads is likely to be smaller than the proportion on paved roads.

¹¹Churchill (p. 120) has observed for Central America cities that congestion is severe throughout the day in the central areas of the large cities, thus exhibiting much less "peakiness" than does traffic in US or European cities.

particularly at that goal which it is likely to be most effective in attaining?¹² It is therefore important to consider each particular type of automotive tax carefully to review its impact on the policy objectives. On the basis of this analysis a strategy of optimal urban automotive taxation may then be developed as it is appropriate for each city.

In any case, the existing institutional framework in a city will influence the desirability and feasibility of automotive tax policy. Of particular importance are higher-level government actions, since they may interfere with the ability of local government to design a rational automotive tax policy, either because higher-level government regulations prohibit the local imposition of all or some motor vehicle taxes, or because the higher-level government imposes automotive taxes of its own, which limits the local government's freedom of tax design. To the extent possible these considerations will be allowed for in the following discussion, but even more explicit attention must be given to them in the analysis of automotive tax reform in specific cities.

Fuel Taxes

Assume at the outset, that higher-level governments impose a fuel tax which approximates the variable maintenance costs of interurban paved highways as prescribed by Walters, Churchill, and McLure.¹³ This tax is likely to be in the neighbourhood of 6 US cents per imperial gallon of gasoline, and 10 US cents per imperial gallon of diesel fuel (in 1970 prices).¹⁴ The question is then whether and to what extent local governments in large cities in LDCs should levy a fuel tax over and above this national tax.¹⁵

From the point of view of economic efficiency, the national tax would provide the appropriate charge for road use on uncongested paved urban roads. However, it would be too low for uncongested unpaved urban roads, let alone for congested roads. To the extent that congestion occurs mainly on paved roads, but uncongested traffic is more typical for unpaved

¹²McLure, Charles E. Jr., "Auto-motive Tax Reform" in Malcolm Gillis (ed.), *Fiscal Reform for Colombia*, Cambridge, International Tax Programme, Harvard Law School, 1971.

¹³Walters, Alan, *The Economics of Road User Charges*, World Bank Staff Occasional Paper No. 5, Baltimore, The Johns Hopkins University Press, 1968; Churchill, *op. cit.*; McLure, Charles E. Jr., *op. cit.* Smith *op. cit.*; however, has argued that national fuel taxes might be set at higher rates since they are an easily administered and socially equitable source of public funds.

¹⁴Churchill, *op. cit.* p. 154. These estimates are confirmed by Nanjundappa for India. See Nanjundappa, D.M., *Road User Taxation and Road Financing in Indian Economy*, Bombay, Jawaharlal Nehru Memorial Institute of Development Studies, 1973, p. 32. They fall considerably below the average level of gasoline taxes prevailing in most developing countries. See Smith, *op. cit.*, p. 464.

¹⁵The case where national fuel taxes are set at higher levels will be discussed further below.

roads, it would be appropriate to levy a fuel tax equal to the variable maintenance costs of unpaved urban streets. The loss in efficiency in the use of uncongested paved roads would in all likelihood be offset by improved efficiency in the use of uncongested unpaved roads and of congested roads.¹⁶

However, the degree to which fuel taxes can be set differentially higher in metropolitan areas as compared with the surrounding non-urban districts is limited by the possibility of fuel carrying from low tax to high tax areas. Available evidence indicates that some regional fuel price differentials exist in practice without resulting in major fuel carrying activities. Usually fuel prices are lower in the cities and higher in the outlying rural areas, which is the opposite of what is desirable on efficiency grounds.¹⁷ Therefore, differentially higher fuel taxes could be imposed in most urban areas at a level which would at least reverse the existing price differential. Judging from the Honduran case, an urban fuel tax of up to 10 US cents above the national tax would be feasible.¹⁸ Of course, this tax falls short of the tax which would approximate the cost of unpaved urban roads, let alone a peak congestion levy. From the point of view of efficiency, this tax, therefore, is not likely to be particularly harmful or beneficial. It would not serve to restrict congestion substantially or to impose on the vehicle operator a significant portion of variable maintenance costs of urban unpaved streets, but at the same time it would not significantly distort traffic on uncongested urban streets.¹⁹

The revenue impact of urban fuel taxes, even if at quite modest rates, could be substantial. For instance, in Guatemala City an increase of the fuel tax from the present rate of 2 US cents to 10 US cents in 1971 would have made the fuel tax the largest local tax, exceeding in importance the local property tax, and would have increased local tax revenues by some

¹⁶Such a charge would have to be set at approximately US \$ 2.00 per imperial gallon (see R. Smith, *op. cit.*, p. 465), but would still fall considerably short of a fuel tax designed to cover peak congestion costs, which fall in the neighbourhood of US \$ 6.00.

¹⁷In Honduras, for example, fuel prices in the capital city, Tegucigalpa, are almost 5 US cents lower than in the rest of the country (Churchill, *op. cit.*, p. 69). The reasons for this reverse differential are probably transportation costs and the natural monopoly position of the isolated fuel retailer in the isolated rural areas, which is in turn limited by the costs incurred by fuel users engaging in fuel carrying.

¹⁸Existing local fuel taxes in Guatemala and Bogota (Table 1) are well within this limit.

¹⁹To the extent that one is particularly concerned about the distortionary effects of higher urban fuel taxes on commercial vehicles and on buses, one can consider excluding diesel fuel from the fuel tax, as is indeed the case in Guatemala, Bogota, and effectively in Singapore. Since truck and bus fleets generally, (but not universally; see Churchill, *op. cit.*, p. 69), have a higher proportion of diesel powered vehicles than do automobiles, this would favour commercial vehicles and buses. Furthermore, where bus operators receive subsidies from the government (as in Bogota), these subsidies can be adjusted to offset any higher fuel costs resulting from the tax increase.

fifty percent. In Bogota, the increase of the local gasoline tax from 0.16 US cents to 10 US cents would also have made the gasoline tax the most important local tax with revenues almost double that of the property tax, and would have raised local tax revenues by more than 100 per cent. The revenue buoyancy of this tax depends crucially on whether it is levied at a specific rate or *ad valorem*. In the former case, tax revenues are likely to be inelastic, especially where inflation rapidly erodes the real value of the specific tax.²⁰ In the latter case, however, tax revenues are likely to be buoyant, given the rising value and use of fuel.²¹ What is more, fuel tax revenues are likely to be quite stable, since motor vehicle use does not vary much with short term fluctuations in economic activity.

Fuel taxes also have the great advantage of being relatively easy to administer, especially where the production and distribution of fuel is in the hands of a government-owned enterprise, as is the case in many LDCs. *Ad valorem* taxes are more difficult to administer than specific levies because of the possibility of evasion, especially at the retail level.²²

In terms of distributional equity, urban fuel taxes are progressive, especially if provisions are made to exempt a substantial portion of commercial traffic through an exemption of diesel fuel, and if it is possible to ensure that bus operators and users are not affected by the fuel tax increase. Automobile ownership and use is highly concentrated among the higher and middle income groups in all LDCs²³ and thus a tax on fuel is likely to be highly progressive.²⁴

Finally, one must consider whether urban local governments should be encouraged to levy a local fuel tax even where national fuel taxes are imposed at rates above the variable maintenance costs on inter-urban paved roads. National fuel taxes in LDCs typically fall within the range of US \$ 0.20=0.40, although in some countries they are as high as US \$ 0.60.²⁵ In all cases, however, these taxes fall considerably short of the tax that would be appropriate for the use of uncongested unpaved roads (US \$ 2), not to mention the level of a congestion tax. The efficiency loss incurred from an additional US \$ 0.10 tax in urban areas, especially if it falls mainly on automobiles, is likely to remain quite small at these levels of taxation. Perhaps more important is the question whether higher-level governments are likely to be willing to let local authorities share in such

²⁰In Bogota per capita gasoline tax collections in constant prices declined between 1961 and 1972.

²¹*Ad valorem* taxes also have the advantage of not distorting the price/cost relationship for fuels. See Walters, *op. cit.*, p. 211.

²²*Ibid*, p. 213.

²³World Bank, *op. cit.*, pp. 25-26.

²⁴For an estimate of a highly progressive incidence of fuel taxes in Portugal, see Tanzi, Vito and De Wulf, Luc, *The Distribution of Tax Burden by Income Groups in Portugal*, paper presented at the Conference on the Portuguese Economy, Lisbon, October, 1976.

²⁵Smith, *op. cit.*, p. 464.

an important revenue source. The experience to date leads to some scepticism on this score.

Motor Vehicle Sales and Transfer Taxes

Sales and transfer taxes on motor vehicles increase the price of the vehicle and thus increase the cost to the user to the extent that depreciation is linked to use. However, since depreciation is not significantly higher for use of the vehicle on congested, as compared with uncongested roads, a sales tax which would attempt to raise user costs close to congestion costs would involve substantial efficiency losses due to reduced motor vehicle use on uncongested streets. For moderate increases in depreciation costs as a result of an increased sales tax, the response of vehicle use is likely to be low, thus involving neither major efficiency gains in terms of reducing congestion, nor efficiency losses on uncongested streets. Of greater importance may be the impact of the sales tax on the decision whether or not to own a vehicle at all, since the price of new (and used) vehicles would be raised by the tax. To the extent that automobiles are used mainly for commuting, a reduction in automobile ownership could have a significant impact on urban congestion, even if it did not much affect the use of automobiles by those who continue to own them. Of course, the decline in automobile ownership—or more likely, the slow down in its growth—also means a loss of welfare to those who would have owned and used the vehicles on uncongested streets, and in that respect it results in inefficiency. As with fuel taxes, the efficiency effects of a vehicle sales tax operate in opposite directions, the net impact of which cannot easily be quantified.²⁶

A differentially higher urban sales tax on automobiles is quite difficult to administer, since the potential for evasion is considerable. Automobiles may be purchased in lower tax jurisdictions, or out-of-town addresses may be given if the tax is linked to the residence of the purchaser, rather than the place of residence. The incentive for evasion is likely to be higher for sales taxes than for annual license tax (which are discussed in detail below), since the tax base is smaller for the former tax than for the latter; and therefore, if an equal amount of revenue is to be collected, the tax rate per vehicle has to be higher for a sales tax than for a license tax.²⁷

Nevertheless, the revenue potential in terms of revenue level and buoyancy of an urban motor vehicle sales or transfer tax can be substantial, as

²⁶A minor advantage of a sales tax, or compared with a fuel tax, is that the former can more readily be structured to discriminate between commercial vehicles and buses on the one hand, and automobiles on the other.

²⁷The experience in Jakarta, where both types of taxes are levied by the city authorities confirms this *a priori* argument. The degree of evasion appears to be much higher for the vehicle transfer tax than for the annual vehicle license tax, although approximately equal amounts of revenue are derived from both taxes.

the of example of Jakarta has shown. There the transfer tax accounted for 22 per cent of all locally raised revenues, with a very respectable buoyancy of about 1.5.²⁸ Also, the incidence of these taxes is likely to be progressive. However, there arises a problem regarding the horizontal equity of an automobile sales tax. When the tax is imposed or increased, current vehicle owners experience a windfall gain since the value of their vehicles increases as a result of the tax on new automobiles. This problem does not arise with annual license taxes, which are considered next.

Unrestricted Annual License Taxes

Unrestricted annual license taxes are usually levied by the taxing jurisdiction on the vehicles owned by residents in that jurisdiction. Since residence, rather than use of the motor vehicle, is the criterion for application of the unrestricted annual license tax, this tax does not affect the use of a vehicle once it has been purchased. However, the decision whether or not to own a motor vehicle is affected by the license tax, since the expected annual net return from the vehicle will decrease as a result of the license tax. As with the sales tax, this may indirectly reduce urban traffic congestion to the extent that automobiles are used in urban areas predominantly for the purpose of commuting to and from work. Again, however, a license tax which is sufficiently high to reduce traffic congestion to efficient levels would also lead to an efficiency loss in the reduced use of uncongested roads. The net efficiency impact of the unrestricted annual license tax is, therefore, uncertain, and it is not necessarily superior or inferior to fuel or vehicle sales taxes on efficiency grounds.

In practice, commercial vehicles and buses are often taxed at lower rates relative to vehicle value, than are automobiles destined for personal use. This may reflect the recognition that the price elasticity of demand for these vehicles may be higher than that for private cars, that the marginal social cost of their use in urban traffic is less than that of automobiles, or that cars are felt to make a lesser contribution to the development objectives of the city or country than do commercial vehicles and buses. Differentiation of the unrestricted annual license tax according to weight or tire type may reflect (apart from ability-to-pay considerations) the realization that vehicles with higher weight or with non-pneumatic tires tend to impose higher variable maintenance costs than vehicles with lesser weight or pneumatic tires. Engine capacity, which also is at times a criterion for differentiating license taxes, are seen as a proxy for fuel use, but there is only an imperfect correlation between engine capacity and fuel use, and between fuel use and the social costs imposed by the motor vehicle. Thus none of these typical discriminating features of the annual

²⁸Buoyancy is here defined (and throughout this study) as the income elasticity of tax revenues.

license tax, as applied in practice—possibly with the exception of the lower taxes on commercial vehicles and buses—are likely to produce significant efficiency gains, although they may lead to changes in the composition of the vehicle fleet, if they are imposed at high enough rates. For instance, light or less powerful vehicles may be encouraged by the practice of taxing according to weight or engine capacity. Instead of attempting to affect the allocation of resources through differentiating between vehicles of different characteristics, it is more appropriate to utilize the annual license tax predominantly for the purpose of raising revenue and redistributing income. It would then be more desirable to vary the tax with the value of the automobile since this could reflect quite adequately the ability to pay of the users.

Vehicle owners may attempt to escape the annual license tax by registering their vehicles in low tax jurisdictions. This limits the degree to which license taxes can differ, especially between adjoining jurisdictions. However, there is reason to believe that some differentiation without major evasion is feasible. First, in the US, insurance rates differ considerably between location without any large-scale attempts at evasion by the insured.²⁹ Second, with a combination of vigorous enforcement and sizable penalties, as typical for many of the jurisdictions imposing personal property taxes on automobiles in the US, compliance may be expected to be good, even in LDC cities. The example of Jakarta tends to confirm this conclusion: Penalties of 100 per cent of tax liabilities apply there in the case of attempted tax evasion, and evidence suggests that these penalties have been applied effectively, with confiscation of the vehicle as the ultimate means of enforcement.

A good motor vehicle registration and licensing system is crucial to the success of a tax on motor vehicle ownership, but it is also essential for the purpose of identifying and prosecuting traffic offenders, and for curbing motor vehicle theft, which in some LDC cities (e.g., Bogota) has reached epidemic proportions.³⁰ Assessment of the tax can proceed by schedules designed either according to physical characteristics of the vehicle (such as weight, engine capacity, etc., or according to assessed value of the car. The former in practice can be more easily implemented, and is in fact more widely applied than the latter in LDC cities. The local authorities in Jakarta switched in 1972 from a vehicle value base to an engine capacity base in assessing the local license tax. The greater effectiveness in the administration of this tax, as compared with the vehicle sales tax, which in that same city continues to be levied on vehicle value, may in part be attributed to the different assessment procedures.

²⁹Walters, *op. cit.*, p. 201.

³⁰In this respect motor vehicle taxation is quite similar to real estate taxation, for which the existence of a good physical cadastre is essential. The cadastre in turn serves other important purposes besides property taxation.

In terms of revenue performance annual motor vehicle license taxes can make a considerable contribution to locally raised revenues in LDC cities. In Jakarta, the motor vehicle license taxes accounted for approximately 25 per cent of all local taxes during fiscal year 1972-73, and in Seoul for 22 per cent in 1971, while the buoyancy of these taxes was 1.5 and 1.2 in the respective city during the preceding years.

Revenue performance substantially depends on tax administration. In Jakarta and Seoul, where administration was good, and where rates were regularly adjusted to allow for changes in the general price level, the level of revenues and their buoyancy was high. In contrast, due to poor administration and erosion of real tax rates per capita revenues collected from the motor vehicle license taxes in Bogota declined when allowing for inflation. In Cartagena (Colombia) vehicle tax revenues expanded rapidly in recent years and exhibited a buoyancy in the neighborhood of unity. In Bombay and Ahmedabad revenues collected from local motor vehicle taxation remained approximately constant in real per capita terms, and thus showed a buoyancy probably less than unity. The main lesson from these widely divergent revenue experiences is that the capacity of the motor vehicle license tax as a major revenue source for urban governments depends very much on how it is structured and how aggressively it is administered. The rapid growth in the base will ensure a certain amount of revenue growth, but evasion and inflation are likely to cut heavily into this growth potential where administration is poor and where specific tax rates are not regularly increased to keep them in line with rising prices.

Turning finally to the question of incidence, the motor vehicle license tax is progressive in its incidence, especially since commercial vehicles and buses are usually taxed at concessional rates. This conclusion is confirmed by various tax incidence studies covering vehicle taxes in different LDCs especially in Panama, Turkey, Lebanon, Puereto Rico and Portugal.³¹

Congestion Charges

All automotive taxes discussed so far have the predominant goal of raising public revenue in an equitable and administratively simple fashion. Efficiency concerns are generally secondary, and justifiedly so, since the efficiency impacts of these taxes are uncertain, and for moderate levels of taxation they are probably not of great importance. The other

³¹McLure, Charles E., Jr., "The Distribution of Income and Tax Incidence in Panama, 1969", *Public Finance Quarterly*, Vol. 2., No. 2., April, 1974; Krzyaniak, Marian and Suleyman Ozmucur, *The Disbribution of Income and the Short-run Burden of Taxes in Turkey, 1968*, Program of Development Studies, Paper No. 28, Houston, William Marsh Rice University, 1972; De Wulf. *op. cit.*; Mann, Arthur J., "Net Fiscal Incidence in Puerto Rico", *Caribbean Studies*, Vol. 13, No. 1, April, 1973; Tanzi, Vito and De Wulf, Luc, *op. cit.*; Typically these studies assume that vehicle taxes are borne in proportion to expenditures on private automobiles or in proportion to automobile ownership.

side of the coin is, however, that while these taxes are good instruments for raising revenues for urban governments in LDCs, they should not be expected to deal effectively with one of the major problems of urban life: traffic congestion in the central city. Measures need to be specifically designed to impose on the road user the full marginal social cost of his use of the road way, if the efficient use of urban streets is to be achieved. Three major types of congestion charges will briefly be evaluated here: area and time-specific vehicle licenses, parking charges, and tolls.³²

*Restricted Licenses.*³³ Any congestion pricing scheme depends on its ability to distinguish between congested and uncongested areas and times. Restricted vehicle licensing schemes achieve this goal by requiring that road users exhibit special licenses while operating in prescribed zones of the city and at specified times of day. These licenses are purchased on a daily or monthly basis at prices which are set to approximate the social marginal cost of vehicle use in the congested areas. For the system to remain administratively feasible, the number of zones that are differentially priced has to be kept small, and the zonal boundaries must be clearly defined. This limits the fine tuning that may be expected from a restricted licensing scheme, and therefore the degree to which differing conditions of congestion may be approximated. The system is likely to be more easily applied where congestion is largely confined to one major central area in the city, and where the peaks of congestion are well defined and restricted to one or two times a day. Where there exist various centers of traffic congestion, or where there are multiple daily peaks in commuting traffic, the restricted licensing scheme is likely to be more difficult to apply.³⁴

From the point of view of efficiency, restrictive licensing schemes are clearly preferable to any of the other forms of automotive taxes discussed earlier, in that they directly deal with one of the major problems of urban growth: traffic congestion. Minor losses in efficiency may occur to the extent that the system needs to be kept simple and therefore cannot differentiate between differing congestion costs within the restricted zones

³²Other potential congestion pricing systems, *e.g.*, various types of mechanical metering devices for measuring and charging for road use, not discussed here, since they are expensive in terms of capital costs, are highly foreign-exchange intensive, potentially difficult to administer, and so far largely untried for purposes of congestion pricing; see Walters, *op. cit.*, p. 209; World Bank, *op. cit.*, p. 91. Also neglected here is the fact that in some cities not only motor vehicles, but also non-motorized vehicles such as bicycles, animal carts, and pedestrians, contribute to urban congestion (Nanjundappa, *op. cit.*). Fiscal measures are not likely to prove useful instruments to control this type of congestion.

³³This section draws extensively on Watson and Holland, *op. cit.*

³⁴Bogota is a good case in point: That city has at least two nodes of major congestion—the central business district and the commercial district in the North of the city, and there are four peak traffic times due to the prevailing custom of the city's citizens to return home during the long lunch hour.

or times of day. Also, induced congestion just outside the restricted zone or time of day may create problems and lead to efficiency losses. Furthermore, since congestion costs are difficult to measure precisely and since the response of motorists to congestion pricing is not easily predicted, the charges set initially may be too high or too low, and thus may not provide the optimal rationing of road space. It is, therefore, important that authorities be prepared to vary the license charges if after some lapse of time they appear to restrict traffic too much or too little.

The experience of Singapore provides a valuable example of the feasibility and impact of restricted motor vehicle licensing schemes, although it represents a special case in a number of respects. First, Singapore is a city-state with a strong and dynamic metropolitan-wide government which is not hampered by higher-level government controls or intra-metropolitan jurisdictional fragmentation. Second, the metropolitan administration of Singapore attracts highly qualified staff, while in other LDC cities local authorities are typically not able to compete effectively with higher-level governments for scarce manpower. Third, the Singapore authorities have for a long time been concerned with the rising extent of private automobile ownership and the resulting actual and prospective congestion and environmental deterioration in the city, and have demonstrated a willingness to take strong measures to deal with these problems, including various types of automotive taxation.

The result of the restricted licensing scheme as applied in Singapore may briefly be summarized as follows: First, the basic aim, *viz.*, a reduction of congestion in the restricted zone, was fully achieved, possibly even to an excessive extent, raising the question of whether the charges set initially were too high. A substantial increase in the use of public transport facilities and car pooling was registered. Second, as a direct result of the reduced congestion, travel speeds were improved, and the level of pollution and the incidence of traffic accidents dropped. Commercial operations apparently were not negatively affected, although a preexisting trend toward increased decentralization of commercial location decisions may have been reinforced.

Third, major problems affecting the efficiency of traffic operation were limited: initially, congestion occurred on the ring-road encircling the restricted area, and 'mini-peaks' in congestion were created immediately before and after the restricted hours. The former problem was alleviated by improvements in traffic management and engineering; the latter by extending the restricted hours.

Fourth, administration, enforcement and public acceptance of the scheme proceeded smoothly. This was due to a large scale publicity effort starting a year ahead of introduction of the scheme; to the gradual introduction of the scheme; and to a rigorous enforcement of the license

regulations and the application of stiff penalties.³⁵

Fifth, the revenue and equity implications of the scheme, while not of great scope, are on balance favourable. Annual revenues net of operating costs, when compared to revenues collected from other taxes on motor vehicles or from property taxation, are not substantial (approximately 2 per cent of motor vehicle taxes and 1 per cent of property taxes), but at least the system does not constitute a net drain on the public purse and compared to other tax measures has a very low ratio of administrative costs to revenues (less than 1 per cent).³⁶ The distributive incidence of the scheme has not been fully assessed so far, but there is reason to believe that with a high concentration of motor vehicle ownership and use among high income groups, the financial and adjustment costs of the scheme are borne mainly by these groups.³⁷

One may conclude that the area license scheme in Singapore has proved to be a successful instrument for pricing central city road use and for limiting congestion without major negative administrative, revenue or equity implications. This is no guarantee for the success of similar schemes elsewhere, but the Singapore example indicates that area license schemes must be taken seriously as a potential instrument for improving the efficiency of urban road use. Any attempt to replicate the Singapore example should take note of the various practical aspects which helped to make the system work: Adequate study and preparation, including an extensive publicity campaign; simplicity of regulation and flexibility in implementation; pre-existence of an effective vehicle registration system; a clear commitment to the enforcement of the scheme; and unfettered authority by the metropolitan government to impose whatever scheme was regarded as most appropriate.

Parking Fees. Parking fees and taxes have been suggested as the major alternative to charging motor vehicle operators directly for the use of congested urban streets.³⁸ It is argued that, first, parking space is jointly demanded with the commuter use of automobiles during rush hours; and, second, since on-street parking interferes with the use of the road space by moving traffic, parked vehicles should be charged the cost to others resulting from these interferences. The parking tax would have

³⁵The fact that the principle of 'owner-liability' was used certainly was a major help, since it does not make it necessary to stop vehicles entering the restricted zone without the proper licenses. Of course, the existence of an effective motor vehicle registration system is an essential prerequisite.

³⁶Capital costs of the scheme were minor, especially when compared to the high costs of central city street construction and improvement, which are the more conventional course of action in attempting to deal with the problem of congestion.

³⁷This must be qualified to the extent that high income automobile users appear to have more readily switched over to car pools than low income automobile users. Car pools do not pay the license fee.

³⁸McLure, *op. cit.*, p. 705; Churchill, *op. cit.*, p. 145; Walters, *op. cit.*, p. 203.

two major components: One would consist in taxing commercial and private parking facilities in congested central city areas;³⁹ the other would consist in levying fees for on-street parking either through attendants (as in Jakarta) or through parking meters (as in Central American cities).⁴⁰

Taxes on off-street parking facilities were not encountered in any of the cities surveyed in the course of the present study with the exception of Singapore.⁴¹ In fact, at least one city, Cali, employs a perverse policy: The construction of central city parking facilities is encouraged by exempting for a period of ten years all commercial parking lots from all major municipal taxes, especially the property tax and the industry and commerce tax.⁴²

Besides the pervasive failure of public authorities to realize the need for taxes on parking facilities, the administration of these taxes is difficult, particularly if the tax is to be levied on an *ad valorem* base of parking rates, as suggested by McLure. In effect, it may be administratively simpler to levy a property tax surcharge on central city parking facilities.⁴³ This would discourage use of central city space for private or commercial parking facilities, and discourage use of existing commercial parking lots, because parking lot operators would presumably pass on some of the higher taxes to their customers.

Fees for on-street parking involve expensive metering and considerable attendant and enforcement requirements. Rough cost-benefit calculations can be carried out to determine whether parking meters should be used in any particular case.⁴⁴ Parking fee collection and enforcement, if properly

³⁹It is important that private parking spaces be taxed also since otherwise the coverage of the tax would be incomplete and inequitable.

⁴⁰Churchill, *op. cit.*, p. 111.

⁴¹In Singapore parking fees for public parking lots were increased substantially with the introduction of the area license scheme. At the same time, commercial parking lot operators were required to charge fees equal to those on public lots, and to pay the difference between old and new rates to the government. No effort was apparently made to tax private parking facilities.

⁴²Presumably the misguided rationale for this policy is to provide an alternative to on-street parking. However, no consideration appears to be given to the fact that the policy, if anything, encourages commuting by car and provides a tax relief for high income garage and vehicle owners. On-street parking, to the extent it is permitted at all, is not reduced by this measure, since all available spaces are always likely to be used, given that they are free of charge.

⁴³Where local property taxation is regulated by higher-level government, this may require cumbersome legislative action. Use of other taxes, such as the industry and commerce tax in Latin America, could also be considered in that case.

⁴⁴Walters, *op. cit.*, p. 203 f. In LDCs it is likely to be important to shadow price the foreign exchange requirements for parking meters as well as labour inputs for administration and enforcement, since with the existing trade and labour market distortions this may affect the cost calculations considerably. See also Churchill, *op. cit.*, p. 145, for alternatives to parking meter for levying on-street parking fees, such as parking-cards or disks.

administered, do not necessarily lead to insurmountable problems. In Guatemala City, for instance, about 4,500 parking meters, as well as parking regulations, are apparently successfully administered and strictly enforced.⁴⁵

The administration of on-street parking facilities is likely to be quite costly.⁴⁶ In fact, during peak congestion periods it may be preferable to forbid on-street parking altogether on congested streets, since even one single parked car may seriously hold up traffic.⁴⁷ Furthermore, parking meters and prohibitions are more easily administered where the congested areas are confined to relatively small contiguous central city areas and a few major thoroughfares. Where congestion covers a wide and dispersed area, on-street parking fees and regulation are less likely to provide an effective control over the use of central-city streets. What is more, as Churchill has observed (p. 145), at going wage rates in LDCs it may be worthwhile using chauffeurs rather than pay the parking fees, thus leading to a possible increase in traffic congestion.

Tolls. Little needs to be said about tolls for the control of urban traffic, since they are clearly not an appropriate tool for implementing a system of congestion pricing. First, for a toll system to be operable, entry and exit points on the roadway must be limited in number, which is typically not the case for congested urban streets, with the exception of the few existing limited-access expressways. Second, toll collection is costly in terms of administration, and may itself contribute to congestion, since it can create a bottleneck for traffic around the tollgate. Tolls are, therefore, not an efficient instrument for congestion pricing in most circumstances.

SUMMARY AND CONCLUSION

The main arguments in this paper may be summarized by relating the impacts of the various automotive taxes to the goals and constraints of urban policy.

In terms of *economic efficiency*, restricted area license charges, and parking fees and taxes are most desirable, since they can be designed so as to approximate the excess of social over private cost of the use of congested streets, without at the same time restricting the use of uncongested streets. All other automotive taxes also affect the allocation of resources

⁴⁵Churchill, *op. cit.*, p. 111; In Cali, a well-trained and highly motivated team of municipal transit police is keeping a tight rein over moving and stationary traffic in the city center, to the great lament of all motorists. A similar effort could be made there for the enforcement and collection of parking charges.

⁴⁶In Guatemala City, for example, administrative costs amounted to 64 per cent of gross revenues from parking meters (Churchill, *op. cit.*, p. 111).

⁴⁷*Ibid.*, p. 144.

to some extent, but the direction of the net impact is uncertain, as efficiency gains and losses occur side by side. The unrestricted license tax probably affects resource allocation least of all.

In terms of *equity*, all forms of automotive taxation are likely to improve the distribution of income, and most are fair in the sense of horizontal equity. The only exception in the latter respect is the motor vehicle sales tax, which results in windfall gains to the owners of the existing vehicle fleet.

In terms of *revenue performance*, local fuel taxes and unrestricted license taxes can perform well as regards revenue level, buoyancy, and stability, but these taxes should be levied on an *ad valorem* basis, if buoyancy is to be preserved in the absence of frequent rate changes. The sales and transfer taxes are likely to be less effective in their revenue performance, due to the narrower tax base and the greater likelihood of year-to-year variations in the base. Congestion levies are not notable for net revenue generation, since they have a narrow revenue base and may be costly in terms of administration.

From the point of view of the *ease of administration*, fuel taxes are probably most easily implemented, while congestion levies are likely to be most troublesome. However, the examples cited in this paper have shown that restricted licences, and parking taxes and fees are administratively feasible, if carefully designed and implemented.

The extent to which the various taxes *require coordination with higher level government* is likely to be an important element in the ability of an urban government to impose local taxes. On this account, fuel and sales taxes are the weakest candidates, since for these taxes the overlap with national or state taxing authority is likely to be substantial. In contrast, license taxes and congestion charges can probably be imposed in most cities without serious interference from higher-level governments.

Finally, the *political acceptability* in practice is a crucial constraint on local tax policy. Differential taxes may be relatively easy to impose in this respect since, like most indirect taxes, they tend to be hidden in the sales price of the fuel. On the other side of the spectrum are restricted license taxes and high parking fees. The problems here are that the very principle of congestion pricing is not well understood by policy makers and by the public, and that significant changes in the choice of travel modes would be induced by these measures. The combination of lack of experience and of the unwillingness to consider or accept fundamental changes is a very powerful deterrent to policy action. The example of Singapore is, however, an important step forward in demonstrating the feasibility and effectiveness of urban congestion charges.

The optimal course of action in automotive taxation in the large LDC cities is likely to consist in the judicious combination of a selected number of the instruments here reviewed. Unrestricted license taxes and possibly

differential fuel taxes can make major contributions to local revenue generation without any major untoward efficiency impacts. Restricted license taxes and parking fees and taxes could then be imposed mainly with the aim of constraining urban congestion. Singapore is a show case for this kind of comprehensive approach to the problem of automotive taxation, and although it is favoured by a number of special circumstances which have greatly facilitated the design and implementation of a rational urban automotive tax structure, this example is well worth careful study by experts and practioners in urban finance and management.

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*Municipal Finances in Gujarat: The Problem of Imbalance Between Needs and Resources**

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and
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THIS PAPER highlights the problem of imbalance between needs and resources of Municipal bodies of Gujarat and discusses the ways and means to fill up the gap mainly in the light of existing tax structure of these local bodies.

FINANCIAL NEEDS OF MUNICIPAL BODIES

Gujarat occupies an important place in the industrial map of the country. As is wellknown, increasing rate and spread of industrialization generally accompanies rapid rate of urbanization. The latter as a natural corollary brings on a massive scale a host of urban problems such as housing for living, provision of water supply, provision of health services, environmental pollution, etc., and consequently a heavy burden on municipal bodies to make provision of related basic civic amenities. Gujarat as a relatively industrialized State also has a higher rate of urbanization, compared to India. In 1961, 25.4 per cent of total population of Gujarat was residing in urban areas compared to corresponding figure of 18 per cent in India. In 1971 this ratio increased to 28.13 per cent for Gujarat while for India the increase was upto 19.87 per cent. Not only that, urban areas have experienced increasing rates of population growth but it is also observed that larger towns have felt increasing growth of their population compared to smaller towns. In 1951, small towns contributed only 35 per cent of total urban population in Gujarat. In 1961 and 1971 this percentage reduced to 22.81 per cent and 21 per cent respectively.¹

*This paper was presented at the Seminar on "The Role of Direct and Indirect Taxes in Underdeveloped Countries" held at Department of Economics, Gujarat University, Ahmedabad on 8 9 April 1978.

¹Mahesh Bhatt, *Some Aspects of Urbanisation in Developing Countries*, Presidential Address to Economics Session of the Second All India Academy of Social Sciences, February 20-23, 1977, Banaras Hindu University, Varanasi.

Increasing pressure of population on bigger cities has led to serious problems of slums and low level of municipal services. The municipal bodies of bigger cities thus burdened with the problem of providing civic amenities to rapidly increasing population find themselves no match to the problem. Attraction of population to bigger cities has another facet of the problem too. Smaller towns experienced stagnation in their development as a result of declining growth rates of population. Municipal bodies in these towns are thus not able to mobilize enough resources even to provide minimum basic services for their inhabitants.

The Report of the committee of Ministers to recommend measures for the augmentation of financial resources of Urban Local Bodies (1962)² (more popularly known as Zakaria Committee) gave norms of per capita minimum expenditure for providing satisfactory level of civic amenities. For different category of municipal towns their norms were different. For 'A', 'B' and 'C' categories of municipal towns they were respectively Rs. 33.40, Rs. 27.62 and Rs. 24.27.³

As these norms were recommended in the year 1962, their application to the present period has to take into account the price change also. At the current price level the above norms will change to Rs. 100.20 for 'A' class towns. Rs. 82.86 for 'B' Class towns and Rs. 72.81 for 'C' Class towns. If we compare actual per capita expenses of municipal bodies with these norms, we find that none of the 'A' and 'B' class municipal towns are satisfying these norms. Among 'C' category only two municipal bodies seem to satisfy the minimum norms. In Table 1, comparison of

TABLE 1 FINANCIAL NEEDS OF GUJARAT MUNICIPAL BODIES TO MEET MINIMUM NORMS OF CIVIC AMENITIES

<i>Category of Municipal Bodies</i>	<i>Desireable Norm of per capita expenditure (Rs.)</i>	<i>Per Capita expenditure in 1973-74 (Rs.)</i>	<i>Shortfall (Rs.)</i>	<i>Percentage of (0) to (1)</i>
(1)	(2)	(3)	(4)	(5)
A	100.20	41.88	58.12	58.00
B	82.76	43.53	39.33	47.66
C	72.81	44.53	28.28	38.84

SOURCE: *Statistics of Municipal Towns and Cities 1973-74*, Government of Gujarat, n.d.

²Zakaria Committee Report, 1963.

³'A' Class municipal towns are those having population above 1 lakh. 'B' Class are those having population between 50,000 to 99,000 and 'C' Class are those having population between 20,000 to 49,000. Gujarat has 4 municipal bodies of category 'A', 17 municipal bodies of category 'B' and 31 municipal bodies of category 'C'.

desirable norms of per capita minimum expenditure derived from Zakaria Committee with the average per capita expenditure of municipal bodies in different categories has been made.

From Table 1 it can be seen that none of the three categories of towns show satisfactory level of performance on the norms of per capita expenditure. Another feature worth nothing is that in comparison to small municipalities, bigger municipal bodies have shown a larger shortfall of per capita expenditure compared to the desirable norm. From the above information it may be calculated that while A class municipal bodies needed Rs. 5.34 crores to satisfy expenditure norms of Zakaria Committee, they could spend only Rs. 2.23 crores. Thus these bodies could not raise Rs. 3.09 crores needed to satisfy the norm of expenses to provide minimum civic amenities. In a similar way, 'B' class of municipal bodies needed Rs.4.25 crores and 'C' Class of municipal bodies needed Rs.3.06 crores over and above their actual expenditure to satisfy the norms of desirable expenditure.

TABLE 2 ESTIMATES OF FINANCIAL NEEDS OF MUNICIPAL BODIES

<i>(Rs. in crore)</i>			
<i>Municipal bodies</i>	<i>Total amount of desirable Ex-penditure</i>	<i>Actual expenditure</i>	<i>Deficit</i>
A	5.34	2.23	3.10
B	8.97	4.71	4.25
C	7.87	4.81	3.06
Total	22.18	11.75	10.41

From the preceding discussion it is evident that Municipal bodies have not been able to mobilize resources adequately to meet minimum requirements of civic amenities. A study of sources of revenue and tax structure is thus necessary to explore ways and means to achieve the minimum standards.

REVENUE SOURCES OF MUNICIPAL BODIES

Municipal bodies of Gujarat have mainly three sources of revenue: (1) Taxes, (2) Non-Tax revenues, (3) Grants-in-aid. Table 3 gives percentage distribution of total revenue according to these three main sources. It is clear from this table that taxes form the most important source of the revenue of municipal bodies. More than 60 per cent of revenue comes from taxes. Grants come next and non-tax revenues come last in order.

TABLE 3 SOURCES OF REVENUES OF MUNICIPAL BODIES

(in percentage)				
Year	Tax revenue	Grant	Non-tax revenue	Total
1960-61	62.80	12.06	24.06	100.00
1961-62	66.55	17.60	15.85	100.00
1968-69	59.35	20.08	20.57	100.00
1970-71	62.55	19.07	18.38	100.00
1971-72	64.92	16.81	18.27	100.00
1972-73	62.86	18.74	18.40	100.00
1973-74	61.64	20.53	17.83	100.00

From the viewpoint of financial autonomy it is desirable that main sources of revenue should be from own sources and dependence on higher layers of Government should be as low as possible. One danger of liberal provisions of grants-in-aid is that the own efforts of municipal bodies to mobilize resources get slackened. Keeping this in view, Rana Committee (1972) appointed in Gujarat had recommended to relate the amount of grants with the own tax efforts of municipal bodies.

TAX STRUCTURE OF MUNICIPAL BODIES

Table 4 gives the percentage distribution of total tax revenue according to taxes. Octroi and Property Taxes are found to be most important of the tax sources. From Octroi which is an indirect tax, Municipal bodies receive more than 65 per cent of total tax revenue. Direct taxes including taxes on property and others contribute 32 to 34 per cent of total revenue.

It is thus clear that indirect taxes predominate in the tax structure of Municipal Bodies. One significant reason for this predominance of indirect taxes such as Octroi lies in the insufficient tapping up of such direct taxes as taxes on property which should have been the primary source of revenue at this layer of Governmental bodies.

The maximum rate of property tax in municipal bodies is between 15 to 20 per cent of total annual rental value of the property. Only 8 out of 52 municipal bodies tax property at this rate slab. Most of the municipal bodies are able to realize even less than 10 per cent of total annual rental value of property through this tax. Eight municipal bodies do not levy tax at all on property.

The municipal bodies find themselves unable to realize full revenue even at such low rates of property taxes. This is clear from the data on the extent of revenue realization from this tax. Most of the municipal bodies are not able to realize even 50 per cent of total realizable value

TABLE 4 TAX STRUCTURE OF MUNICIPAL BODIES IN GUJARAT

Year	Indirect Tax		Direct tax					(in percentages)	
	Octroi		Taxes on land and property	Drainage sanitary conservative rate	Taxes on trade and commerce	Revenue from public light	Water tax	Other rates and taxes	Total direct taxes
1968-69	68.33		15.58	2.31	N.A.	N.A.	10.12	3.66	36.67
1970-71	67.42		16.09	2.35	0.87	0.10	10.26	2.50	32.20
1971-72	67.50		16.70	2.33	0.56	0.09	10.60	2.23	32.50
1972-73	67.25		15.71	2.38	0.41	0.10	11.27	2.87	32.00
1973-74	65.57		16.68	3.43	1.37	0.07	9.57	3.29	34.43

and no municipal body is able to get full 100 per cent of this realizable value.⁴ To improve this sort of situation it is necessary to implement Zakaria Committee's recommendation of fixing up the norm of percentage of collections and of refusing to give grant and loan to those municipal bodies which fail to achieve this norm.

Another problem relating to property taxation is that of underassessment of property. It is quite possible that underassessment may vary from 25 per cent to 85 per cent from case to case. One solution for this may be to make the owner declare the valuation of his property and in case this valuation is less than market valuation or Government's valuation made on the basis of some predetermined rules, then Government should take possession of the property. Central Government has accepted this recommendation of Wanchoo Committee in 1972 in connection with central taxation on property.

The same recommendation needs to be implemented in connection with local bodies. Another way could be to assign the work of *assessment* to a central valuation agency. Almost all committees appointed in our country have made this recommendation. Another advantage of this type of central agency would be that it will improve not only the income of local bodies but also the realization of central property taxes. Among central taxes, such taxes on property, gift tax, inheritance tax, capital gains tax, etc., are also based on the property valuation and the information collected by a central valuation agency will improve efficiency of tax collection on property. Tax evasion may also be checked by such an agency. In the end it may be pointed out that in the initial stages of development increasing incomes lead to ownership of tangible forms of property but later on as development proceeds, possession of intangible form of property becomes more important and traditional property taxes do not cover this increasing form of property. If only tangible forms are covered by property taxes of local bodies, there is all possibility of its becoming regressive, since rich persons after having needed tangible property give greater attention to intangible form such as shares and securities, etc. A tax on tangible form of property thus has greater incidence on poorer people.

OCTROI

In the case of local bodies Octroi is the only source of indirect taxation. Like any other indirect tax it also has its adverse effects.⁵ The

⁴Government of Gujarat, *Report of the Committee on Grant-in-Aid for Municipalities and Municipal Corporations*, Rajkot, Government Printing Press, 1972.

⁵M.P. Bhatt, "An Uneasy Case for Indirect Taxation", paper presented at the same Seminar in which present paper was read.

issue of continuing or removing Octroi has been quite controversial.⁶ Among various defects which Octroi has as an indirect tax, mention is made of the following important ones:

“(1) It is inequitable as its incidence is regressive. (2) It operates adversely on trade, commerce, industry and agriculture. (3) It creates artificial barriers and thereby impedes growth of trade and commerce. (4) Its cost of collection is high and there is evasion and corruption in its administration.”⁷

But looking to its high revenue potential and the absence of a suitable alternative Octroi remains the main form of taxation in India. The high revenue yield can be judged from the fact that while in 1961-62 in Gujarat, local bodies got Rs. 206.34 lakhs from Octroi, in 1969-70 this figure went up to Rs. 434.78 lakhs. This implies a rapid growth rate of 14 per cent per annum which is much larger than from any other source of revenue. The argument that because of Octroi trade and commerce and other economic activities are adversely affected has no firm empirical foundation. In Gujarat, judged from the growth in the number of registered factories, shops and establishments and business firms it can be definitely said that growth of trade and commerce has not experienced noticeable set-back. Another argument that collection cost of octroi tax is very high is also not well founded. In fact the collection cost has never exceeded 9 per cent of total revenue from this source during 1963-64 to 1969-70. It is true that smaller municipal bodies have to spend a larger per cent on collection compared to bigger corporation. But nevertheless the percentage even in small bodies remains low compared to the ceiling limit of 25 per cent fixed by Government (as per Government orders vide G.R.G.D. No. 1297 dated 11th April 1882). The arguments of tax evasion and bribery in relation to Octroi tax collection may be valid but they are valid in relation to other taxes also at even central and state level. Regressive nature of Octroi tax cannot be denied in the same way as of any other indirect tax. Thus looking to weak arguments against Octroi, it may be concluded that because of adequate revenue which this tax yields and also because of a measure of financial autonomy which it imparts to local bodies, the base for removing Octroi, remains weak.

NORM FOR TAXATION

Recently *Relief* committee has made some suggestions for calculating quantum of grants-in-aid to municipal bodies. The committee gives

⁶Mahesh Bhatt, “Is There a Case for Abolition of Octroi?”, *Nagarlok*, Vol. 9, No. 4, Oct.-Dec. 1977, pp. 52-60

⁷*Ibid.*, p. 52.

following norm of tax collection for three categories of municipal bodies.

TABLE 5 TAX COLLECTION NORM FOR DIFFERENT CATEGORIES OF MUNICIPAL BODIFS

<i>Type of Municipal body</i>	<i>Annual per capita norm (in Rs)</i>
A	45
B	40
C	35

If we apply these norms to the working of municipal bodies, it is found that only 6 municipalities satisfy these norms. Table 6 shows the shortfall in total revenue actually collected compared to tax revenue expected to be received by following the norm for three categories of corporations:

TABLE 6 SHORTFALL IN REVENUE COLLECTION IN DIFFERENT CATEGORIES OF MUNICIPAL BODIES

(Figures in lakhs of Rs.)

<i>Type of municipal body</i>	<i>Total revenue expected by following norms of per capita tax effort</i>	<i>Total revenue from actual per capita tax collected</i>	<i>Shortfall</i>
A	239.85	235.69	— 4.16
B	432.80	343.53	— 89.27
C	387.35	364.40	— 22.95
Total	1060.00	943.62	—116.38

If Municipal bodies made efforts according to the norms given by the committee then they can get 1060 lakhs of Rupees while they actually get Rs. 943.62 lakhs only. This means that these municipal bodies have to make additional tax efforts for Rs. 116.38 lakhs. This additional tax effort will also help them in reducing the shortfall of actual expenditure compared to norm of expenditure.

CONCLUSIONS

From the present study it is clear that there is no way out for municipal bodies except to intensify their own tax efforts for attaining minimum standards of civic amenities. Of course, grants-in-aids from higher layers of Government are essential but they must be given on a matching basis so that local bodies do not become complacent in their tax efforts and

quality of civic services does not get deteriorated. The analysis of tax structure reveals that there is no escape from indirect taxes because of their revenue potential. There remains much to be done to improve structure of property taxation so as to have viable tax rates (at a higher level with a progression to greater extent) and to have taxes also on intangible form of property. Thus only a concerted effort on the part of both local bodies and State Governments can improve the current situation of serious financial imbalances between needs and resources.

□□

Urbanization—Its Impact on Present and Future : Urban Public Service Systems in Karnataka by 2001 AD

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and
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LOCAL URBAN public sector is entangled with a multitude of afflictions requiring deep probe and wide exploration. The reasons for this are generally attributed to a rapid phase of industrialization and the consequent urbanization which are presumed to have generated a disequilibrium between the demand for and supply of the public goods.¹ The paradox is that the demand whom it emanates from, has not borne at least a part of the cost of inputs and this has escalated the proportions of the urban crisis. Such a situation has obviously brought down the quantity and quality of public services available to the urbanites and tended to lead to a state of undernourishment of the public goods at the detriment of the welfare maximization. The effect of these have produced a credibility gap between the local consumers and the local public authorities and made the former to resent the revenue mobilization efforts of the latter on the ground that the revenue sacrifice is not adequately compensated by the supply level of public goods.²

In addition, the need for a national outlook³ on our towns has never

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¹Throughout this study, we use the connotation 'public goods' to refer to the total output of services of the local urban governments. See S. Rama Rao, and M. Nageswara Rao, "Some Aspects of Population and Expenditure on Urban Public Services", *Nagarloka*, Vol. X, No. 1, January-March, 1978.

²See S. Rama Rao and M. Nageswara Rao, "Problems and Prospects of Urban Local Governments in Karnataka", *Economic Times*, March 22, 23 and 24, 1977.

³See Ashish Bose, "Some Critical issues in Urban Development in India" paper presented in the national symposium on Urban Development, held at Hospet, February, 1976.

been visualized and this has resulted in a haphazard and unplanned development of towns without devoting much attention to alleviate the proliferating problems of urbanization.

The present analysis is devoted to portray the present and the future urban public service system in terms of *preferred and desired* levels of outlays by the year 2001 AD. This paper is an extension of the authors' explorations in the area of urban local sector,⁴ an area relatively unexplored in the realms of public economics. The study considers a selected set of public goods such as water supply, public health and medical services, sewerage and sewerage disposal, roads and sidewalks, street illumination and public safety, education, horticultural operations, directly produced and distributed by the urban governments. It may be noted that this selection of services is governed by two criteria: Firstly, data limitations did not allow us to widen the scope and secondly, we were reconciled that these are by and large the only important functions of urban public sector.

PRESENT URBAN SERVICE LEVELS

As it has been universally acknowledged,⁵ financial constraints and growing urbanization have limited the ability of the urban local public sector in production and distribution of public goods. It would be interesting to review the present supply levels of the public goods to serve as a guide to design the future levels. For our present analysis, we have selected the urban local governments of Karnataka State. For the purposes of convenience and comparability, we have divided the towns into two groups: Major and Medium (and minor) on the basis of population above 50,000 and below 50,000 respectively.

The *Municipal Finance Enquiry Committee (MFEC)*⁶ has observed that, within the two groups of the local authorities, the inter and intra-group service levels differentials are getting widened on account of the financial constraints and lack of proper rationality of allocation. Our empirical analysis⁷ also substantiates the Committee's observation. It is evident from Table 1 that the difference in coefficient of inequalities (coefficient of variations) of financial levels and some service level indicators between major and medium towns are considerably high. Under these circum-

⁴See S. Rama Rao and M. Nageswara Rao, *Economics of Urban Local Public Sector*, (in progress)

⁵W.J. Baumol, "Macro Economics of Unbalanced growth: The Anatomy of Urban Crisis", *American Economic Review*, Vol. LVIII, 1967.

⁶*Report of the Municipal Finance Enquiry Committee*, (Government of Karnataka, Bangalore, 1975, (Ch. V. p. 72.

⁷S. Rama Rao and M. Nageshwara Rao, "Intermunicipal Expenditure Variation—An Econometric Analysis", *The Indian Journal of Economics*, Vol. LVIII, Part III, No. 226, (January 1977).

tances, what is urgently required is to increase the availability of urban services in conformity with the norms.

TABLE 1 COEFFICIENTS OF INEQUALITY OF FINANCIAL AND SOME SELECTED PUBLIC SERVICE LEVELS

<i>Description</i>	<i>Major</i>	<i>Medium & minor</i>
<i>I Financial Levels (per capita)</i>		
1. Total Expenditure	0.247	0.611
2. Expenditure on public health, medical services and sanitation	0.311	0.592
3. Expenditure on public works	1.161	1.010
4. Total revenue	0.243	0.692
<i>II Some Service Level Indicators</i>		
1. Street illumination	0.583	1.032
2. Road length	1.246	1.159
3. Medical facilities	0.514	0.834
4. Water supply	0.781	1.060
5. Public health	0.840	1.101

Let us analyse the standards of the public goods in these towns. Table 2 presents the recommended⁸ and existing levels of some of the urban public services.

SERVICE LEVELS

1. Water supply is far inadequate than the level suggested by the national team. The present supply is between 60 and 28 litres per diem per head between major and medium towns while the suggested level was 273 and 114 litres respectively.

2. Public health and medical services include scavenging, street cleansing and hospital amenities. (a) The public toilet facilities are very poor (both in number and quality) in smaller towns while they require a drastic improvement in the major towns. While the statutory building licence insists on the construction of these, in practice it is left to the vagaries of the landlords. (b) The number of the medical beds in municipal maternity houses and dispensaries is very poor. It is 0.32 beds per 1,000 population in the major towns while in the medium towns is 0.67. (c) Scavenging and street cleansing standards require to be stepped up. While for want

⁸Report of the Committee on Augmentation of Financial Resources of Urban Local Bodies, Government of India, New Delhi, 1963.

TABLE 2 GAPS IN THE PUBLIC SERVICES (SELECTED)

Public Service	Major		Medium	
	Recommended level*	Present level †	Recommended level	Present level †
1. Water supply (per capita, per diem, in litres)	273	60	114	28
2. Roads (per sq. km. or qualitative)	60' with 1 to 1½" surface (Qualitative only)	7.28	44' with 1' bitumen carpeting (Qualitative only)	6.25
3. Medical beds (per 1,000 population)	N.A.	0.32	N.A.	0.67
4. Street Lights (per km. Nos.)	N.A.	134	N.A.	110
5. Lavatories (per 1,000 population, or qualitative)	One septic tank lavatory per house	24 (ordinary)	One bore hole lavatory per house	24 (Ordinary)
6. Sewerage (Qualitative)	50 % effluent treated on Land	Very poor and inadequate	50% effluent treated on land	Not existing indeed

*Suggested by the committee on *Augmentation of Financial Resources of Urban Local Bodies*, op. cit., pp. 114-6. Even though our classification of urban bodies into Major and Medium may not be strictly comparable with that of this Committee's, these are the only recommended standards available at national level and hence an approximate comparison is made here.

†Calculated from the available data. Quality of the service cannot be specified for want of detailed information.

NA = Not available.

of finances some towns cannot increase the inputs of this service, the output in a few towns despite large numbers of human input is paradoxically meagre. The growing migration and lack of civic sense have added to this problem further.⁹

3. Sewerage and Sewage disposal form the basic core of the environmental hygiene in our towns. Open drains have posed a big threat to most of the dwellings. While it is the multiplication of slums and growing emigration that have been mostly a cause and effect in the metropolises, it is the lack of such service that is aggravating the situation. A few towns which are satellites to the expanding metropolises are sometimes left with no option except suffering from the sewage disposals of such metropolises. The recommendations¹⁰ of the committee would appear worth considering. It may be mentioned that the supply of *pucca* sewerage system without a commensurate improvement in the road network has proved uneconomical and frivolous. The inability of the towns to go for *pucca* drainage and inadequate sprayal of larvicidal have deteriorated the hygienic conditions. Some of the towns with less than satisfactory town planning, poorer spacing between dwellings and the gradual increase in the population density has increased the problems of sewerage. Attempts to acquire lands for this purpose are slower than the rate at which they are called for.

4. The whole communication system has to be designed to meet the growing needs. In some towns the length of roads and the quality are poor while it is only the latter that caused concern in a few. Since the transformation of mud to gravel to tar is not remunerative to a town authority, the investment pattern in this public good appears to be poor. While the urban roads are inadequate in terms of the existing volume of vehicular traffic, the rural towns are not in a position to provide minimum passable roads for the haulage of the marketable surplus. The roads per square kilometre in the major towns is 8.28 kms, it is 6.50 kms in the medium towns. An increase in the road network with the specifications suggested by the committee may have to be adhered to.

5. Public safety appears to be not well attended to. In some towns some areas regardless of human settlements are overilluminated than the others. Adequate illumination and attending to the replacement in time are some of the measures required.

⁹A point to be mentioned in this connection is that already the metropolises are overburdened with problems of providing adequate quantities of public goods on one hand and fiscal exigencies on the other. A further concentration by increased settlements resulting on account of natural and migratory nature would exacerbate the situation. Hence the alternative course of action appears to develop our towns and make them viable and attractive. See Brigg, Pammela, *Some Economic Interpretation of Case Studies of Urban migration in Developing Countries*, International Bank for Reconstruction and Development, Bank Staff Working Paper No. 1.51 (March 1973)

¹⁰*Ibid.*, Tables IV and V, p. 115.

6. Education in the towns was mostly a public service with a few exceptions. But on account of the anomalies perpetrated in the provision of this public good, a graduate takeover by the State Government is in progress. Some of the norms that are required are: (a) maintaining a required pupil/teacher ratio, (b) ensuring per pupil availability of space, and (c) timely payment of salaries to the teachers.

7. The importance of the horticulture has to be recognized especially in view of the sprawling urban jurisdictions and also to combat a part of the air and atmospheric pollution. Allocations on this public services are often too inadequate and surprisingly enough a few towns have not thought over this indeed. Population growth, accelerated increase of urbanization and industrialization have a tendency to escalate the demand for this service. Increased density, housing problem and as a basic necessity to the pupils, this public service may gain importance in the local budgets.

8. Management of the civic affairs requires qualified and competent personnel. One of the major complaints is that our local government system is too unattractive to absorb qualified and competent managers. Many of the departments seem to have been either over-staffed or output is meagre or both, while a few suffer for want of coordination. The main emphasis here is that overstaffing might help generate more employment but at the same time it would be a drain on the meagre resources of these public authorities. Ultimately, these have widespread repercussions on the allocation branch of the public economy.

Capital Formation

While this is the situation with respect to the standards of the present services, the poor capital formation of these institutions is a matter of serious concern. In fact, the revenue from their own sources has not shown any rise commensurate with the current and capital needs. It is interesting, in this connection, to note the estimates of capital requirements made by the *committee* for different grades of towns (Table 3). These estimates indicate the need for a massive investment for an improved level of social and economic infrastructure. When these estimates even at 1961 prices appear to be beyond the reach of the towns, the investment to be made at the current prices would be difficult to accomplish. It may be borne in mind by the higher tier and also these towns that lack of adequate infrastructure besides debilitating the efficiency with which a service can be produced and distributed, might make its production costlier in future.

FUTURE URBAN SERVICE LEVELS

After having analysed the existing standards of the infrastructure facilities in the towns, it would be pertinent to devote our attention to the

TABLE 3 RECOMMENDED PER CAPITA COST OF PROVISION OF SOME SERVICES FOR DIFFERENT CLASSES OF URBAN GOVERNMENTS

Per capita cost Rs. (1961 prices)

<i>Service</i>	<i>Urban Government Classification</i>			
	<i>Class B</i>	<i>Class C</i>	<i>Class D</i>	<i>Class E</i>
1. Water supply	39.0 (20.2)	30.0 (19.6)	22.0 (18.2)	18.0 (18.8)
2. Sewerage (including drainage)	81.0 (42.0)	67.0 (43.8)	54.0 (44.6)	45.0 (46.9)
3. Roads and buildings	41.0 (21.2)	29.0 (19.0)	21.0 (17.4)	16.0 (16.7)
4. Street lighting	22.0 (11.4)	20.0 (13.1)	19.0 (15.7)	14.5 (15.1)
5. Others (parks, libraries, etc.)	10.0 (5.2)	7.0 (4.6)	5.0 (4.1)	2.5 (2.6)
Total	193.0 (100.0)	153.0 (100.0)	121.0 (100.0)	96.0 (100.0)

NOTE: Figures in parentheses denote percentages to total. We have considered here those classes of towns which fit into our comparative analysis.

SOURCE: *Report of the Committee on Augmentation of Financial Resources of Urban Local Bodies*, Government of India, New Delhi, 1963, p. 116.

future perspective of the urban service levels, given the present levels and further, by building the scenarios ¹¹ of future urban service systems.

Limitations

The following are the constraints in our explorations:

1. Due to non-availability of required financial data of individual urban units for sufficient period of past years, we have confined to a period from 1960-61 to 1973-74 only which has been converted to 1971 prices and used for further analysis.
2. All the financial estimates are at constant (1971) prices so as to overcome frequent fluctuations of the future trends.
3. The scenarios written for each service here are commensurate with the nation wide future developments. The purpose is that, "it provides a combined picture of various compatible future events"

¹¹'Scenario writing' is one of the methodologies of technological forecasting introduced during the recent years. For further discussion see Rohatgi, P.K., "Methodologies of Technological Forecasting" (Mimeo), a paper discussed at "Workshop on Futurology/Technological Forecasting", Indian Institute of Science, Bangalore, February 1977.

and "considers the interrelationships and develops the collective impact of a group of forecasts".¹²

Data Availability

The population projections of Karnataka State are available up to the year 1986.¹³ The number of towns and cities and their respective population are available in the previous census reports. Some of the physical levels of the urban services are obtained from the *MFEC* and census reports, financial data are taken from *Brochures on Finances of Municipalities in Karnataka State* (Bureau of Economics and Statistics, Bangalore) and through questionnaires. However, out of 245 urban units, comparable data are available only for 228 towns (including cities) and hence, we confined to them only.

Methodology

The expansion of urbanization and possible movement of urban towns to higher grade towns makes the core of the problem. Hence, the forecasting process starts from the individual urban units and their populations. Firstly, we have divided the towns into three categories: major, medium and minor and then estimated their respective population and probable shifts from lower grade to the higher one upto the year 2001 A.D. For the sake of convenience and comparability, we clubbed the medium and minor grade towns into one category. Thus ultimately we have organized them into *major* and *medium* towns only.

To estimate the public service levels, we proposed to measure them in terms of per capita expenditures of urban units. The per capita expenditures and their growth rates are calculated for the years from 1961-62 to 1973-74.

The next stage would be the criteria of selecting an appropriate extrapolation technique best suited for forecasting the future trends of these service levels.

Forecasting can be done by using the trend extrapolation methodologies. The basis of these is that "future value of a technical capability or production from a technological activity, is an extension of its past performance, at least into near term futures¹⁴". Generally, the techniques used here are simple statistical time extrapolation, similar to those used in economic forecasting.¹⁵ However, there are certain limitations in employing

¹²P.K. Rohatgi, *op. cit.*

¹³*Population Projections for Karnataka—1972-86*, (Bureau of Economics and Statistics, Bangalore, 1973).

¹⁴P.K. Rohatgi, *op. cit.*

¹⁵For further discussion see (1) J.C. Chambers, "How to choose the Right Forecasting Technique", *Harvard Business Review* 49 (4), 45, 1971, (2) J.R. Bright, "A Few Kind Words for Trend Extrapolation", *Futures*, 5 (4), 344, 1973.

the trend extrapolation in studies like ours. Though, it is an easy and a quick way of obtaining a forecast, it is not necessarily the accurate one. Also, "intending present trend curves to several decades in the future... with less time period past data is certainly not valid."¹⁶ The application is, hence limited and any conclusions drawn would give with less degree of confidence. To overcome these limitations, modified "technological forecasting techniques" are developed by various persons. One such method suitable for our study is a simple statistical extrapolation with 'Substitution'¹⁷ which has been extensively used in many fields during the recent years. Here the parameters of a technology can often be forecast by extrapolating the rate of substitution of what technology by some other recent technology. By extending the scope of this method, "incremental substitution" of most probable future technologies into simple forecasting technique, by developing a scenario would provide the forecasts with significant degree of confidence.

However, to have a set of relative choices of forecasts, we proceed to employ both the techniques discussed earlier to get various alternative implications of urban service systems in the coming decades. In doing so, a set of criteria were adopted by considering what would be the future position with: (1) the existing per capita service levels, and (2) the prescribed norms suggested by the National Committee if adopted from the base year 1971.

Both these categories are examined by the above mentioned forecasting techniques as: (a) with constant growth rates (we call it as *minimum* level), and (b) with incremental (positive or negative) growth rates taking the growth rates as base commensurate with the scenarios¹⁸ to be developed for each service (we call it as *maximum* level). On the basis of per capita requirements, *minimum* and *maximum* levels of category (2) may be given more emphasis in relation to the *maximum* level of category (1). These two levels could be the lower and upper limits in statistical terms for the future trend of committee's norms which ought to be implemented to meet the needs of fast expanding urban horizons. In the view of the urban service consumers, these limits may become the *desired* and *preferred* levels respectively. The changing life styles of urbanites make them *prefer* qualitatively sophisticated services rather than quantitatively *desirable* services supplied by the urban governments.

¹⁶P.K. Rohatgi, *op. cit.*

¹⁷J.C. Fisher and R.H. Pry, "A Simple Model of Technological Change," *Technological Forecast and Social Change*, 2, 75, 1971. Also see, M.O. Stream, R.V. Ayres and A. Shapanku, "A Model for the Substitution of One Technology for Another", *Technological Forecast and Social Change*, 7 (1), 57, 1975.

¹⁸Incremental rates depend upon how different authors visualize the future and write the scenarios and hence these rates need not be unique.

The simple formula used to arrive at the above estimates are respectively:

- (a) $E_{i0} (1 + r_{i0})^{t_j}$ and
 (b) $E_{i0} [1 + (r_{i0} + r^k)]^{t_j}$

where

E_{i0} = per capita expenditure category of the base year 1971.

r_{i0} = annual growth rate derived from the past data

t_j = years from 1971 to 2001 A.D.,

$j = 1$ to 30.

r_k = incremental growth rates added for the decades 1971-1981, 1981-1991 and 1991-2001.

Finally, all the per capita expenditures are converted into absolute figures.¹⁹

FORECASTING OF SCENARIOS, TECHNOLOGICAL FUTURE URBAN GROWTH, URBAN SERVICE SYSTEMS AND THEIR OUTLAYS

What the present holds is not an encouraging trend since financial and managerial constraints have put a serious premium on the acceleration of desired momentum in the system of public service levels. Therefore, besides emphasizing on the need for larger investments, let us build a scenario for future public service systems so as to provide various possibilities of future events.

Our scenario strikes optimism. The need for democratic decentralization and the concomitant functional performance of the local urban public sector are expected to enhance the production and supply possibility of the public goods. The desirable aspects of the service systems are that: Effective urban population growth will be checked and immigration towards major urban centres will be reduced by developing the medium size towns²⁰ and making them attractive in terms of investment which would be capable enough to generate multiplier effects²¹ in employment and local incomes which in turn would play a tremendous role in shaping the towns and the related sectors.²²

On the basis of this proposition the growth of major, medium (and minor) towns and their respective populations are estimated and presented in Table 4 and their growth rates for the coming decades up to 2001 AD

¹⁹Background work sheets will be supplied by the authors on request.

²⁰Developing satellite towns can also be presumed to be a much desired one to reduce the heavy demand for services.

²¹See Ashish Bose, *loc. cit.*

See Sayed S. Shafi, "The Urban Imperatives and Role of Small and Medium Towns in India", paper presented in the National symposium on Urban Development, held at Hospet (February 1976).

²²See Koichi Mera, "On the Urban Agglomeration and Economic Efficiency", *Economic Development and Cultural Change*, Vol. 21, 1973.

TABLE 4 ESTIMATED GROWTH OF URBAN TOWNS AND URBAN POPULATION IN KARNATAKA

Year	Major Towns		Medium Towns		Minor Towns		Total	
	No.	Urban population (lakhs)	No.	Urban population (lakhs)	No.	Urban population (lakhs)	No.	Urban population (lakhs)
1971	19	42.23	79	16.79	130	12.20	228	71.22
1981	24	65.46	97	20.15	132	13.73	253	99.34
1991	39	113.56	113	24.49	123	15.96	275	149.01
2001	50	171.84	124	47.69	111	11.44	285	230.97

TABLE 5 PROJECTED GROWTH RATES OF URBAN POPULATION

Year	Class of Towns		
	Major	Medium and Minor	Total
1971	—	—	—
1981	5.50	1.69	3.95
1991	7.35	4.63	5.00
2001	5.13	7.08	5.50

are presented in Table 5.

It is projected that during the decade 1981-91 the growth rate of major towns will be 7.35 per cent which is higher than the decade 1971-81 (5.50 per cent) and this growth will decrease to 5.13 per cent during the decade 1991-2001. Whereas for medium (and minor) towns population will be left free by increasing it from 1.69 per cent in the decade 1971-81, to 4.63 per cent in the decade 1981-91 and to 7.08 per cent in the decade 1991-2001 thus allowing the total urban population²³ growth between 3.95 per cent to 5.5 per cent.

However, even at the level of strict urban population control, it is likely to be doubled third time since 1901, sometime in the later part of 1980s (See Table 4 and Fig. 1). Doubling period is being reduced since 1901; it took 43 years for doubling at first time while it took only 23 years

²³All these would entail a phenomenal metamorphosis in terms of consolidation of the towns so as to conform to the needs of the metropolization and also to derive economies of scale. See Warner Z. Hirsch, "Expenditure Implications of Growth and Consolidation", *Review of Economics and Statistics*, Vol. 41, 1959.

Also see Jerome Rotherurberg, "Local Decentralization and the Theory of Optimal Government" in Julius Margolis. (ed.) *The Analysis of Public Output*, NBER, New York, 1970, Ch II, pp. 31-68.

for second in 1967 and anticipated for third to take only 21 years, by the year 1988 (see fig 1).

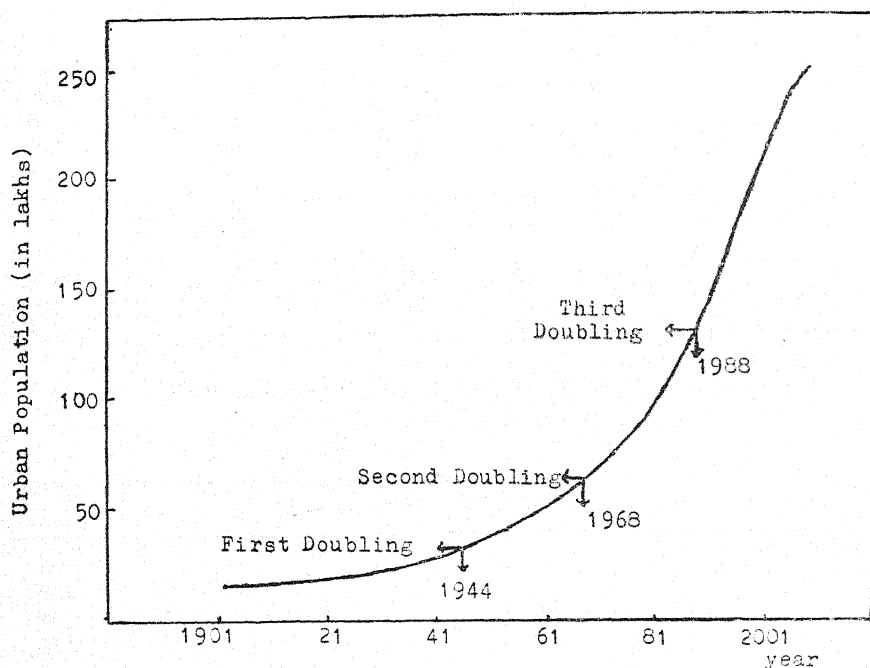


FIG. 1. Karnataka Urban Population Growth, 1901-2001 AD

The same panorama will be reflected with respect to the density in towns. Table 6 indicates how fast the urban density would be highmarish to the urban local public sector. The density per square kilometre while it was 1717 in 1961, it increased to 2272 in 1971 and is likely to be very serious indeed by the year 2001 AD.

TABLE 6 URBAN POPULATION DENSITY²⁴

Year	1961	1971	1981	1991	2001
Density (persons per sq. km.)	1771	2272	3065	4394	6506

Service Level Analysis

The levels of expenditure on the spectrum of public goods as it has been presented, are very low at present. Against this, the estimate with the existing level by 2001 AD would be far less satisfactory than the

²⁴Also see R.P. Mishra, *et. al.*, *Regional Development Planning in India : A New Strategy*, Vikas, Delhi, 1976, Ch, 3,

current level (Table 7). The *desired* and *preferred* levels of norms show what ought to be the level of expenditure to provide a specific quantity of public good at a level congenial for the welfare maximization. It would be interesting to compare various scenarios that are considered with respect to each of the public good.

1. Water supply forms the basic core of the public good analysis. Against the present background, the *desired* and *preferred* requirements have been presumed. Investments in water supply industry are meant to benefit in the first stage the consumer voter and in the next stage it becomes a private good to be used in the process of the industrial and commercial activity. By the year 2001 AD every town is expected to have its own water supply network. Cases where two or more towns jointly accomplish this service from the standpoints of economy and efficiency can also be anticipated.

In the case of major towns, during the base year 1971, the existing level of expenditure being Rs. 211 lakhs and according to the recommended level it would be Rs. 905 lakhs leaving the gap to the tune of Rs. 694 lakhs. If the present level continues by the end of this century, will reach Rs. 859 lakhs at its minimum level; with moderate expansion, it may reach to the maximum Rs. 1251 lakhs; whereas the recommended level would be Rs. 3681 lakhs as *desired* level and Rs. 7176 as *preferred* level. Thus making the gap still wider to the extent of Rs. 2822 lakhs, Rs. 6317 and Rs. 2422 lakhs and Rs. 5924 lakhs respectively. Same is the case with medium towns. Since this is a service where there is basically a serious absence of industry and network, its investment requirements cannot be overemphasized.

2. (a) Even though the existing level of expenditure on public health and medical services appears more than the recommended level, the quality of output available is poor due mainly to: (1) lack of motivation towards work and (2) traditional practice of handling the service. For example, street clearing, removal of night soil by groups of persons, etc, tend to increase the expenditure but not the quality. Moreover the latter one is more a remnant of the antiquated system requiring immediate reforms. Advanced and more scientific methods of toilet facilities and mechanized procedures for cleansing operations based on capital intensive techniques will increase the quality of service and help achieve economies in expenditure.

(b) Increased demand for state hospitals and the need for modernization in the existing as well as introducing new facilities in the hospitals require substantial amounts of investment.

(c) Expansion in the jurisdiction on account of consolidation, capital intensive inputs and increased wage bill will precipitate a rise in the expenditures. Also, increased urbanization will impose a burden on the garbage

TABLE 7 EXPENDITURE LEVELS ACCORDING TO THE TWO CATEGORIES OF ESTIMATES
(Rs. in lakhs)

Service	Major Towns						Medium Towns					
	Estimate with existing levels			Estimates with recommended levels			Estimates with existing levels			Estimates with recommended levels		
	Base year 1971	2001 AD		Base year 1971	2001 AD		Base year 1971	2001 AD		Base year 1971	2001 AD	
		Mini-mum	Maximum		Mini-mum (desired)	Maximum (preferred)		Mini-mum	Maximum		Mini-mum (desired)	Maximum
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. Water supply	211	859	1251	905	3681	7176	60	122	160	496	1012	1670
2. Public health and medical services	323	1315	1914	177	722	1342	130	266	416	61	124	283
3. Sewerage and sewerage disposal	179	730	955	1055	4294	7112	58	118	170	548	1118	2181
4. Road and side walks	93	373	526	195	794	1488	50	102	128	76	156	235
5. Street illumination and public safety	102	416	533	288	1174	1855	57	117	138	128	261	346
6. Education	27	—	—	443	—	189	7	—	—	152	—	—
7. Horticulture	27	112	380	34	137	1100	7	15	33	6	12	46
8. General administration	201	820	1605	355	1443	4879	130	265	624	122	248	1118
Total	1163	4625	7164	3452	12245	25144	499	1005	1669	1589	2931	5879

TABLE 8 GAPS IN PRESENT AND FUTURE EXPENDITURES*

(Rs. in lakhs)

Service	Major town						Medium town			
	Gap in the base year 1971			In the year 2001 AD gap between			Gap in the base year 1971		In the year 2001 AD gap between	
	Mini. of existing level and	Desired level	Preferred level	Mini. of existing level and	Desired level	Preferred level	Mini. of existing level and	Desired level	Preferred level	Max. of existing level and
1. Water supply	694	2822	6317	2422	5925	436	890	1548	852	1510
2. Public health and medical services	-146	-593	27	-1193	-572	-69	-142	17	-292	-133
3. Sewerage and sewerage disposal	876	3564	6382	3319	6157	490	1000	2063	948	2011
4. Roads and side walks	102	391	1115	268	962	26	54	133	28	107
5. Street illumination and public safety	186	758	1442	641	1325	71	144	229	123	208
6. Education	416	-	189	-	189	145	-	-	-	-
7. Horticulture	7	26	988	-242	720	-1	-3	31	-21	13
8. General administration	154	623	4059	-162	3274	-8	-17	853	-376	494
Total	2289	7621	20519	5081	17980	1090	1926	4874	1262	4210

*Derived from Table 7.

collection and its treatment by means of more sophisticated methods.

The expenditure under this service will show an increase. In the *preferred* level, it is from Rs. 177 lakhs in 1971 to Rs. 1342 lakhs in 2001 while, the *desired* level will increase to Rs. 722 lakhs in the same period. In the case of existing levels, it was Rs. 323 lakhs in 1971 which will increase to an amount of minimum Rs. 1315 lakhs and maximum being Rs. 1914 lakhs. The expenditure can be reduced by the end of 2001 to the tune of Rs. 593 to 1193 lakhs. Similarly, in the case of small towns, the excess may be between Rs. 142 to Rs. 292 lakhs.

(3) Rise in the urban and industrial activity will require an investment on the sewerage and sewage disposal commensurate with the movements in the public and private sectors. As a measure of achieving higher standards in hygienic operations and ensuring better quality of life, the local urban public sector's functional responsibilities will be immense. Industrial wastes and urban garbage which have been a threat to the quality of life in the western world would, soon be a phenomenon common in our towns also—this obviously will make this sector to invest in modern techniques of linking the sewage to a wide network of sewerage to be left ultimately beyond the town limits. Capital investments in this public good is something that forms the core and the ancillary investments in roads may have to be taken care of.

The *preferred* investment would be more or less double the *desired* investment by 2001 whereas, the present levels are comparatively poor which are drastically to be enhanced to the tune of Rs. 3319 to Rs. 6382 lakhs in the case of major towns and Rs. 948 to Rs. 2063 lakhs in the case of medium towns.

4. Increased vehicular and pedestrian traffic is one of the characteristic features of the urban explosion. Urban levels would envisage for an increase in the length of roads, widening the roads, laying diversion roads, transformation of low quality roads to high quality ones. Similarly, the need for side walks and subways will increase to facilitate the pedestrians. As a measure of saving the quality of the roads, vehicles with non-pneumatic wheels may either have to be given up or restricted in their operation in specified zones. The present level of capital investment may reach by the year 2001 from Rs. 373 to Rs. 526 lakhs, whereas the adoption of recommended levels may reach between Rs. 794 and Rs. 1488 lakhs leaving the gap of investments to be made to the extent of Rs. 268 to Rs. 1115 lakhs in the case of major towns and Rs. 28 lakhs to Rs. 133 lakhs in the case of medium towns.

5. Changes in the life styles, urban craze and the transformation of the agrarian society to the industrial by 2001 AD will result in innumerable changes to be taken care of by the local urban public sector. Illumination as a measure of necessity and luxury (beautification) will require increased doses of investment both in capital and current accounts. Urbani-

zation, along with its lofty merits to the regional and national development, would also give rise to the generation and spread of slums at the detriment of the public services standards and also to the efficient operation of the administrative expediency. Illumination as one of the public goods will then be required to increase its supply in the slums and localities of low income and poverty stricken population, on which the *desired* and *preferred* level of expenditure in 2001 AD would be Rs. 1174 and Rs. 1858 lakhs respectively in the case of major towns and Rs. 261 and Rs. 346 in the case of medium towns.

6. Education up to a certain level to be a free public good, is a norm enshrined in our constitution. As the mechanism of this service has already been discussed, the needs envisaged in this service would be marginal when compared to its counterparts. By the year 2001, it is anticipated that all the medium towns would be relieved of this burden and it is only the major towns which would be concerned with the vocational sort of education as a *preferred* level, both to train its own personnel or the personnel of their counterparts (medium towns) or to enable the people from the low and middle-income families to secure a training and this will cost Rs. 189 lakhs to the major towns.

7. Development of the public gardens and vegetation in and around the towns is imposed by the needs of the times. Environmental and ecological conditions will be at the detriment in case the rate of industrial growth increases. Secondly, as the increased population growth with a rise in the density and per head availability of housing accommodation, and thirdly, the mounting industrial activity making the "centre town theory" applicable involving loss of plenty of time in travel, are a few of the characteristic phenomena that will necessitate an increased provision of this public good from the standpoint of industrial nature. On the other hand, the increase in the number of schools and pupils necessitate for more inputs in the service by the local bodies since education as a public good will have to be provided by the State and the provision of the horticultural, gymnasia, stadia and so on will become a part of the town's responsibilities. By the year 2001, the *desired* and *preferred* expenditure levels would be Rs. 137 and Rs. 1100 lakhs for major towns and Rs. 12 lakhs and Rs. 46 lakhs for medium towns respectively.

8. For the purpose of efficient production and distribution of public goods, efficient administrative machinery is a precondition. It is expected that the diversified activities of the towns and the need to increase efficiency in the provisions of public goods require the participation of personnel of high quality. In future, increased population will also necessitate the towns to serve as the employment generators instead of the need for a cut in the personnel on account of the introduction of the modernized capital intensive techniques in the management. In this connection, the need for making the towns' personnel system more attrac-

tive will be much more pronounced. To achieve this the *desired* and *preferred* levels of expenditures by 2001 AD for major towns would be Rs. 1443 and Rs. 4879 lakhs and for medium towns Rs. 248 to Rs. 1118 lakhs respectively.

On balance, it is evident that while the package of urban public services is poor in quality and quantity, their provision in future at the levels envisaged will be a matter of considerable importance. According to Table 9, it would be clear that if the existing levels continue at least the base year's prescribed standards it will take two or more decades. In a nutshell, this table reveals the decade by which each service can be expected to reach the *desired* and *preferred* levels.

TABLE 9 SERVICE STANDARDS AND THE ANTICIPATED PERIOD TO ACCOMPLISH : MAJOR TOWNS

<i>Service</i>	<i>Desired</i>	<i>Preferred</i>
1. Water supply	Beyond 2001	Beyond 2001
2. Public health and medical services	Beyond 1991	Beyond 2001
3. Sewerage & Sewage disposal	Beyond 2001	Beyond 2001
4. Roads and sidewalks	Beyond 2001	Beyond 2001
5. Street illumination public safety	Beyond 2001	Beyond 2001
6. Education	—	—
7. Horticulture	Beyond 1991	Beyond 1991
8. General Administration	Beyond 2001	Beyond 2001

There would be a considerable gap between the existing system of service levels and the prescribed norms even at constant prices of 1971. The gap is so wide that even before reaching 2001 AD the standards of the urban service system are likely to deteriorate much at the cost of the quality of life of the urbanites. But the major problem confronting this sector will be, how to finance the growing size of outlays which is a topic by itself and for considerations of space we have not attempted here.

CONCLUSIONS

The consequences of urbanization in terms of increased demand of public services has to be acknowledged. Some towns are stationary in their growth, development and contribution to the national stream, a few have failed in total and others could not attempt to participate indeed. Financial, physical and managerial are a few of the problems pronounced to have come in the way of quantitative expansion and qualitative improvement in the production and distribution of public services. In view of the rapid growth of urbanization and metamorphosis in the life styles, the

provisions of services has to be in tune with the needs—an assured per capita supply of services based on the degree of urbanization of the towns is desirable. The present study attempts to present a broad outlook of the future trends of the urban service requirements and points out the need to take sufficient care and make the urban local bodies cautious of the seriousness of their problems. In accomplishing this objective, the local urban public sector has to be equipped sufficiently with finance and managerial inputs.

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*Urban Arrogance**

H. U. BIJLANI

MOST OF us who are engaged in the game of urban planning or development suffer from what may be called 'Urban Arrogance'. Even though we do know that the target group comprises of the poor who form an over whelmingly large majority in our country, our plans, controls, regulations and bye-laws continue to be elitist. We continue to show off our skills in the form of huge costly structure which this target group cannot afford. We want to build flyovers and wide avenues even though the majority of population goes about on bicycle, or infrastructure plans continue to be costly and westernised and our byelaws continue to be such that almost the entire book would seem irrelevant if a small one room house with a kitchen, a bathroom and a toilet is to be built for a poor man. Such attitudes on part of all of us whether we are engineers, architects, planners or generalists reflect what I call 'Urban Arrogance'.

When we think of a 'city beautiful', we come face to face with the problem of development controls. But there cannot be beauty without convenience and in a country, where three out of four families live below the poverty line, the beauty of a city of life for the common men have connotations very much different from what we may have imagined so far. Controlling development is a game you cannot win. When you plan for the masses or the urban poor 'the development plans, the residential structure, the utility services, the common facilities cannot be spectacular and one is outright condemned by the elite, the pseudointellect and the novo-rich for thinking small, for lack of ingenuity and dimension, for being backward in a world which has made fantastic strides in tall and beautiful structures, where planners are thinking of building subterranean cities under the ground and habitats out in the ocean. It is due to fear of this criticism that our planners, architects and engineers forget the common man in their various endeavours or is it that we all suffer from a disease named 'structureophlea' due to which we forget the programmes, the purpose and the object of creating a convenient and a comfortable

*Based on the keynote address at the seminar on "Development Control", organized by the Institute of Engineers (India) at Madras, April 8, 1978.

city for a common man and instead want to ape the form and shape of cities we have seen elsewhere. Traffic statistics in any city will show that large majority of its citizens use cycle as the mode of transport yet in how many plans we provide adequate space for express cycle tracks having priority over the motorized traffic. The Master Plan for Delhi did provide some cycle tracks though rather inadequately and without according any priority over the motorized traffic. But during its implementation even those inadequate provisions were forgotten. One could cite examples in almost every branch of development to bring out in bold relief the fact that although we talk about the economically weaker sections of society we do precious little in our development plans to look after them within their paying capacity in the fields of housing, transport, utilities, proximity to work places, etc. This forgotten man, therefore, erupts with his own meagre resources in squatter settlements, unauthorized colonies and slums. We then look aghast at these human settlements. Where we dreamed a park, a festering slum is born, the area marked for a school yields place to a heap of rubbish and where our children were to swing and play ball, pigs and ghoulish creatures abound. Out of anguish, we try to find solutions in terms of bull-doing these eye-sores and try to find a dream settlement nearer to our heart's desire. We forget that there is something which is even worse than a slum, a squatter settlement or an unauthorized colony and that in bulldozing these without providing these poor people with shelter may not be better than what they have achieved through their own effort.

In almost all developing countries, problems of urban development and its various sub-systems continue to escalate and the solutions to these gigantic problems remain as elusive as a Black Sea eel. The total system continues to grow so large in volume, complexity and cost that a catastrophic failure possibility becomes too real to permit complacency of decision makers. Many years back, Rabindranath lamented. 'Take back these cities, return us to the forests.' But we now know for sure that in future years, India will live more in cities than ever before. The pace at which urban areas are annexing more and more land into their fold is phenomenal. During one decade of the seventies, as much as 5000 sq. kms. of additional area (13%) has been put to urban use by cities of all sizes in India. Bigger cities with population of a lakh and above are more glutinous in this respect. One hundred and forty-eight class I cities in India increased their urban area from 8 thousand sq. kms. to 11.4 thousand sq. kms. during 1961-71—an increase of 44 per cent. These burgeoning urban areas over a period of time are expected to grow both in numbers and geographical envelope; along with it will grow the urban problems. Futurologists make us believe that by 2001 A.D., India will have a population of 945 million with density per sq. kilometre of 288 persons as against 171 persons per sq. kilometre in 1971. The maximum impact of such

population pressure will be felt most in the urban areas. By 2001 A.D., the share of urban population to total population will go up from existing 20 per cent to about 30 per cent. Most of this urban population will get concentrated in Class I cities in search of employment opportunities. Another disconcerting trend of uneven intracity concentration of population is expected to unfold and reinforce itself. Spot densities even today in some of the cities, like, Calcutta, are as high as 12,900 persons per hectare. These trends may get reinforced in the years to come. Under this impact of urbanization, the already low level of environment in the cities will further deteriorate. The possible widespread degradation of the quality of human life in cities is a problem to be faced with technological skill, planning, forethought and control. The per capita availability of water, electricity, open spaces will further decline. In the absence of adequate investment in urban development, slum dwellers and squatters will proliferate. The price of this will be paid by towns in terms of beauty and comeliness. The machinery for development control will try vigorously to reverse these inevitable trends. Hence, the struggle between waywardness of city growth and the vigour of the enforcement machinery will ensue.

Development controls as visualized today are only regulatory in theory, and work as 'police power' in practice. Many negative values result from such functioning. Basically, the development controls fall in two groups:

A. Major Controls

- Zoning Regulations
- Sub-division control
- Building Bye-laws

B. Minor Controls

- Fire safety rules
- Health and sanitation rules
- Environment regulations
- Security and safety, etc.

The land use controls are the major tools in the hands of local agencies. A zoning legislation delineates permitted 'uses' (activities) for residential, business and industry, etc. Zoning regulations control what is called 'building bulk', i.e., lot boundaries, heights of buildings, usable area, usable open space, etc. Master Plan strategy which ensures administration of zoning regulations look simple and self-executing. But in practice the city administrations have found to their dismay that this is not so. The cities may grow in any manner but as visualized in the master plan. By the time the zonal plans are finalised, city has changed. Areas marked as green thrive with pulsating human settlements. Instead of revising the

master plan, the law takes its course. The course is both dilatory and time consuming. Human settlements are bulldozed or transplanted to suit the Zonal Plan rather than the other way round. During the last twenty years, more houses perhaps have been demolished by public agencies than were built by them.

Again zoning which originates as a tool to control land development is often distorted on fiscal considerations. Local authorities beset as they are with financial constraints, use zoning for fiscal considerations rather than purely land use considerations. Land uses which bring financial gain to the local agencies are encouraged, while others which create fiscal burdens are discouraged. The community rigs its master plan and accompanying zoning ordinance, making sure that it is almost impossible for low and moderate income families to move into the community. As one expert put it "although zoning is to protect the overall public good, this often appears to be the last consideration as zoning is practised."

When we talk of zoning regulations and building byelaws, these have an obvious tilt towards the urban affluent section. If we have to provide shelter and develop land for the majority of the population which is poor and often non-organized, we have to reframe our byelaws and zoning regulations to see what sort of development is possible which can be within the reach of this weaker section of our society. It is only recently that we have started thinking about having revised densities to reduce the overall cost of developed land and bring it within the reach of urban poor and to have a new set of building byelaws and specifications which can help us put up structures which will take cognizance of local materials, ventilation, heights and minimum areas for amenities which the poor can afford. Uptil now, we have been having byelaws with an elitist approach.

When we dream about developing a city beautiful, we think of wide, cool, tree-lined avenues and free flow interchanges—we do conveniently forget about a large multitude of pedestrians, cyclists and their safety, or even work places for the poor like flatted factories, cheap open air markets, places for day-to day commerce on tehbazari or cheap rental—in short we forget those urban poor who cannot afford to buy a shop or a work place but want just a space to sell their goods or produce their work manually. We seem to think that priority for such facilities in our development plans, lowers the standard of our planning.

If we look at the *modus operandi* of controls of building activities, it is distressing to find that our prevailing systems of controls is such that we almost deliberately connive at the unauthorized activity during the preliminary stages and wake up to demolish or bull-doze structures or habitats when they start humming with human activity. For example, we close our eyes when virgin land is parcelled out in plots and sold through registrations. The registrars will tell us, that they are not concerned with

issues like layouts, land use, etc., and they will go ahead with registration even if subdivisions are unauthorized. Cases are not unknown when vacant plots are sold showing structures as existing in the registration papers so that these documents, become an alibi in courts when unauthorized constructions are carried out at later dates and controlling authorities serve notices, etc., on builders. Similarly, authorities close their eyes when virgin lands are cut out unauthorizedly in plots and sold to urban poor who can not afford to buy properly developed lands because the same is beyond their pocket. When questioned, those in-charge will point out that the law forbidding such development is weak and all that they can do is to prosecute which ultimately results in puny fines. Even machinery to check unauthorized structures comes into full swing when houses are complete and occupied—often after years of occupation since demolition programmes must go *ad seriatum* and datewise and there is a backlog of thousands of structures to be demolished. One wonders where is the logic of clubbing together minor cases of additions and alternations with major unauthorized construction of storeyed houses, godowns and factories. But we are afraid of dealing with cases out of turn.

I am raising these issues which no doubt have been raised in the past on various platforms and then subjected to detailed analysis, but still since these issues continue to haunt us and will continue to pose problems in future, another look by an august body like this, will be immensely useful.

In order to enable ourselves to overcome these problems which will protrude with intensity in the future also, we ought to have a detailed look at the whole fabric of development controls, their viability and what changes are needed to make them effective. For this purpose, I shall emphasise only on two types of impediments that we face and shall face in future:

- (a) Impediments which are inherent in the development controls and;
- (b) Impediments which emanate from the implementing machinery itself

We have plethora of controls and each one of these is implemented as if it exists in isolation from the rest.

Number of technical committees, expert groups, have challenged even the technical viability of the existing building regulations but still we continue to stick to them. The National Building Code and the latest additions to it in the form of low cost housing chapter remain an idealistic approach: though this is the approach which represents the need of the poor, who constitute an overwhelming majority in the country. Adequate housing for all income groups is an elementary social need which has to be met fully by organized efforts in the shortest time span. The technological solutions like industrialized building system has not been fully exploited. Let me emphasize that what is affordable by the majority can

alone be enforceable on the majority. Everything else will remain in the statutes and we condon thing about it.

Equal attention needs to be paid to strengthening the organizations entrusted with the job of enforcement of regulations. While the forces which create, reinforce and accelerate urban growth are predominantly regional and national in character, the solutions to the problem cannot be found at local level. Local Governments are too small to provide effective solutions to the problems posed by both urban explosion and implosion. Similarly, local agencies have not developed adequate resistance to various pressure groups. Examples where changes in zoning and subdivision regulations are made to suit most vocal, vested and variegated groups are available in abundance in various cities. Similarly, the practices and procedures adopted by the enforcement agencies need detailed examination. Once realism is imparted to the various codes, then what is enforceable should be enforced. Even for that, the local agencies need to be strengthened. The State and federal support is the prerequisite to the success of local effort.

Another area which needs emphasis in these discussions is the need of a local institution to resolve local conflicts. What do we do once we discover that the local Master Plan does not represent the realities and rather germinates local conflict of state versus people. Under such circumstances do we change the Master Plan or demolish the people's only assets?

What is required is the change of attitude in our regulations and much more in our approach to the problems of formulation and enforcement of development controls. If we take the following steps, seriousness of the problem can perhaps be mitigated to a large extent:

- (i) *Let our Codes and Standards be oriented towards the economically weaker sections*

By making various standards affordable, we can make them enforceable. Elitist approach has not worked and will not work till at least tolerable living standards are achieved.

- (ii) *Development Controls can be formulated but cannot be enforced at local level*

More of regional approach is needed to solve the local problems. Many local agencies have found to their dismay that land use has completely changed on the periphery just because the other local authority has permitted intensive uses like industrial use, etc. Land use gets determined at regional leaving the enforcement at local level. In the process, the regional authorities rarely get subjected to the pressures and continue to remain in blissful ignorance. It is, therefore, essential that the responsibility is shared by all

concerned authorities. Common goals should be achieved by common efforts.

(iii) *Improving the effectiveness of enforcement agencies*

Some of the above listed constraints of enforcement agencies can be overcome if we strengthen the enforcement agencies. Often we make wrong choice in personnel to handle various development control departments. I have often wondered why we employ engineers to control unauthorized building activity and other follow-up actions when their training in that direction is almost negligible.

(iv) *Periodic Review of all that is formulated and what is enforced*

Cities change and since regulations adversely or favourable affect the people and their possessions, it is desirable that a periodic review of all regulations and development plans is attempted. Static plans trying to deal with a dynamic situation have little change of success.

Last but not the least is the need for reorientation of our total approach to the control system. The objective of development control is implementation of the development plan. As a corollary, the objective of control has to be integrated with the objective of plan itself and its well-defined priority.

In most cases, the primary reason for failure in implementing development control is the incomplete or imperfect planning. On the other hand, no development plan succeeds without a plan for development controls to ensure planned implementation. As Machiavelli said 500 years ago:

"Any plan that does not carry with it a programme for implementation is worthless as a plan and should therefore be abandoned."

Without a development control, there is no planned urban development. But the control cannot be exercised by more legal or statute power unless the support of necessary political, technical, social and economic actions is available. What ails our control system today is the lack of this support and the gaping holes in the planning fabric itself which deserve to be plugged first.

It may not be out of place here to mention that the urban development planning, viewed in the national background, cannot be isolated from the rural development needs. Eighty per cent of our people live in the villages. You cannot hope to improve the quality of life of the urban poor forgetting their poorer brethren in village homes. They will tell you quickly that the shortage of rural housing is more than three times that of urban housing. We have done precious little about it.

In the end, I mention that the future of urban living is one of the most exciting things to contemplate. The city of the future should be efficient, clean, quiet, beautiful, fulfilling, and inspiring. It will require the best of our God-given talents of wisdom, resourcefulness, patience and care. But above all, we need to understand the requirements, priorities and aspirations of the weaker sections of our society.

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*Development Control Through Zoning Laws, Sub-division Regulations and Building Bye-Laws**

G.B. KRISHNA RAO

MOST OF the land in urban areas is under private ownership. Due to paucity of funds and other practical difficulties, it is not possible for public authorities to acquire large tracts of lands within municipal limits for being developed in a planned manner. Hence to achieve this objective, the authorities will have to depend heavily on using 'police powers' by enforcing zoning laws, statutory town planning scheme provisions, building bye-laws, and municipal acts provisions on land developments undertaken by private individuals.

Control over development and use of land and buildings by local authorities may appear to be an interference with traditional property rights and individual liberty but such control in some degree is inevitable if chaotic growth of towns is to be avoided. The primary purpose of landuse controls has been traditionally taken to be to 'promote the health, safety, morals and general welfare of the community'.

In fact during the last hundred years, the growth of towns and cities in India has been influenced more by the enforcement of municipal act provisions and building bye-laws and in some cases due to the activities of the city improvement trusts rather than by implementation of Master Plans.

There is a Municipal Act in every State in our country and this Act is automatically in operation in all municipal areas. Large metropolises like Calcutta and Delhi are governed by a separate Municipal Act. These municipal acts contain vast powers and a municipal body could, under the Act, do almost anything ranging from prohibiting factories, go-downs and huts in certain areas to prescribing buildings lines and street elevations. However, the local authorities have not so far properly utilised all the powers available under the municipal act.

*Presented at the seminar on Building-Bye Laws, Zoning and Sub-Division Control at IIPA's Centre for Municipal Administration, March 11-12, 1969.

A Town-planning Act (which exists in every State except West Bengal, Jammu & Kashmir) really comes into force only when the Master Plan or an area planning scheme has been prepared and got sanctioned under the provisions of this Act. The significance of development control through the enforcement of municipal act, zoning laws and building bye-laws arises from the fact that these are the only instruments available for controlling effectively developments in cities till statutory planning scheme are finalized and especially in areas lying outside the limits of such planning schemes (only a limited number of such schemes have been undertaken and that too in some cities only).

SUB-DIVISION CONTROLS

Due to increasing demand for plots for erection of houses, factories and other structures, the owners of agricultural and vacant lands outside the built-up areas of cities sub-divide their lands into plots and streets and sell them. Sub-division regulations give local authorities powers to exercise control over this land sub-division.

In America, sub-division have to be framed and promulgated by the local authorities. In India, powers for control over land sub-division are available under the Municipal Act and there is no need to frame separate sub-division regulations except in cases of new industrial townships where the municipal act may not be in operation.

There is an obligation, normally under the municipal act, requiring that if any owner of land utilises or sells sites for buildings, he shall save in such cases where the site abuts an existing street, lay down streets giving access to the sites. He is required to send a proper layout plan showing plots and streets to the local authority and obtain its approval before he sells plots, *e.g.*, sections 370 and 371 of the Calcutta Municipal Act). If the land in question falls within the limits of a planning scheme, notified under the town-planning act, then the Municipal Council will take into consideration the scheme proposals and scheme bye-laws while scrutinising the layout application.

The municipal act also specifies normally that the streets shown in the approved layout plan should be properly 'levelled, paved, metalled, flagged, channelled, sewerred, drained and lighted' to the satisfaction of the Council before the plots are built upon (*e.g.*, Section 375 of Calcutta Municipal Act). Thus no licence should be granted for construction of a building on a plot unless the above-mentioned conditions are satisfied. A street shown in the approved layout plan may be declared as a public street by the Council on a petition sent by the owners of adjoining plots if it has been formed in the manner specified in the Act.

Defects in Sub-division Controls

The above mentioned powers for sub-division control in the municipal

act sound good and adequate for ensuring an orderly growth of towns. But here there is a wide gap between theory and reality mainly due to the indifference of landlords to these laws and also due to the slackness in law enforcement.

Land owners keep sub-dividing their lands as plots and streets in our cities and sell the plots without getting the layout plan approved and without caring to form the streets in the prescribed manner. The Registration department is not required to verify if a layout plan was approved by the municipality before registering a sale transaction for a site. Even if this comes to the notice of the local body and if they take action (which they rarely do), the party is usually prosecuted in a court and let off with a nominal fine.

While the landlord has thus indulged in land speculation and reaped good profits without discharging obligations laid down by the municipal act, the parties who have purchased the plots, do not feel the responsibility for forming the streets leading to their plots before erecting structure on them. They somehow manage to get licences for erecting structures even though there is no proper access to it. Later political pressure is exerted on the municipal executive officers for taking over these unauthorized streets and declaring them as public streets even though they are not formed to the prescribed standards. These streets become a liability later on the municipal exchequer, which has to be utilised for forming them properly. The municipal act does give powers to the local body to serve notices on owners of plots abutting the streets to carry out necessary improvements, and in case of non-compliances with notices, to execute the improvements itself and recover the costs. But such powers are rarely exercised.

It is under these circumstances that there is development of unauthorized colonies, scattered and ribbon developments in the suburbs of our cities. One could see examples of such scattered development anywhere outside the Calcutta corporation limits, be it in Dum Dum area or Tollygunje within the Calcutta conurbation. Quite often houses are built on agricultural fields.

The only remedy to this state of affairs, apart from stricter enforcement of sub-division regulations, is for the Registration Department to insist on a no-objection certificate from the municipal authority before registering any sale documents for lands within municipal limits and their vicinity. This suggestion has been made earlier by townplanners in this country but the Registration Department has shown reluctance to agree to this procedure on the ground that it would affect the efficiency of registration work. It would be unfortunate if each Government Department, in pursuit of its own efficiency in a water-tight manner, hesitates to incorporate a procedure in its working whereby a vital public purpose, though not related to that department, is served due to adoption of that procedure.

The various government departments, after all, are wings of the same government which exists to serve the public.

A common defect with the sub-division regulations in the municipal act is that the party sub-dividing an extensive area of land into residential plots is not obliged to set apart some land for parks and other community facilities with the result that after the housing colony has developed the local authority will have to compulsorily acquire suitable sites for public purpose. The only exception to this, to my knowledge, is the Andhra Municipalities Act 1965 which provides that the owner should set apart in the layout adequate sites for playground or park or school or any other public purpose (see section 184-2b of the Act). Even this act does not specify that such sites kept for public purposes should be gifted by the owner to the local authority. The sub-division regulations in the municipal acts need to be amended suitably in this regard.

Another limitation of the sub-division provisions in the municipal act is that they would not operate if abutting an existing street were sold. This may create planning problems later. For instance, after all the plot abutting an existing street are sold, it may be difficult later to take a street connection from the existing streets to the sites behind the plots, already sold out and built upon.

Due to inheritance practice, the ancestral property is sub-divided equally among the successors when it is passed on from one generation to the next causing in urban areas fragmentation of property to a size below the desired minimum levels and this often leads to creation of slums in the built-up areas. Law should prescribe a minimum size below which a plot should not be sub-divided even for purpose of inheritance.

ZONING

The term 'zoning' of a land as generally understood refer, to designating the land for a particular use (say commercial or residential).

Zoning, primarily an American innovation, was for the first time introduced in 1916 when the New York city adopted zoning ordinance for controlling the skyscrapers. It is uncommon to see an American city without a zoning ordinance though there may be several cities in that country without a master plan.

Zoning has not been practised in U.K. where development control is exercised directly from the town development plans and under the provisions of the the town-planning act. In U.S.A. on the other hand the Master Plan has been taken to be a general policy guideline for public and private investments and actually zoning has been practised in isolation from planning and often predates planning. Of course, theoretically zoning ought to be a tool for implementation of the Master Plan with regard to development control. While there is a certain amount of discretionary

power vested with the planning officials in the British development control mechanism, the American traditional distrust of bureaucracy leads them to opt for a rigid system of standards and rules, which constitute the zoning law.

In India, zoning laws are relatively unknown and usually there is no statutory basis for enacting zoning laws (in the form they are practised in U.S.A.). Bombay and Delhi are among the cities in India, having zoning regulations. In many cities in southern India, zoning has been attempted in a limited way by declaration of residential and industrial areas, under the powers conferred by Public Health Act and the municipal Act. The development needs of particular localities, has also been met in some cities by preparing detailed planning schemes (which would include a scheme map and scheme bye-laws on similar lines to zoning laws) for those localities. The zonal development plans of Delhi are examples under this category.

Objectives of Zoning

The object of zoning, to quote New Jersey Court (1956) is to 'protect the private use and enjoyment of property and to promote the welfare of the individual property owner, Promoting the general welfare is a means of promoting private property. I may also refer here to the often-cited statement of Justice Southerland that 'a nuisance may be merely the right thing the wrong place like a pig in the parlour instead of the barnyard'.

The major objectives of zoning are:

1. Safeguarding the character amenity value of a residential or any other type of area by ensuring that there will not be any intrusion of incompatible uses into that area by imposing restrictions on minimum open space around the buildings.
2. Controlling the density of development by limiting the size (bulk) of the structures and thus preventing congestion.
3. Conserving property values (which is also achieved by the above measure).
4. Promoting most beneficial location of industry and business by reserving appropriate lands for these uses.

While building bye-laws and sub-division regulations impose uniform standards overall plots in a municipal area, the advantage of a zoning law lies in the fact that it prescribes different standards of development control for different localities in a manner appropriate to them. For instance, the front setback for buildings could be more in a newly developing suburb than within the old built-up areas of the city.

Contents of Zoning Ordinance

Zoning ordinance sub-divides the city into districts in each of which

specified uses are permissible and restrictions regarding the height, bulk and setbacks for the structures are specified for each district. A zoning ordinance consists of a map and a written statement.

Below are specified some of the typical use-groups from the zoning ordinance of New York city:

- Use-Group 1 Single family detached residential development
- Use-Group 2 Community facilities such as schools, libraries or museum
- Use-Group 4 Other community facilities such as Churches, community centres or hospitals
- Use-Group 6 Retail and service establishments which are needed to serve local shopping needs.
- Use-Group 10 Large retail establishments such as departmental stores.
- Use-Group 17 Manufacturing uses which can normally conform to high performance standards and are compatible to adjacent residential areas.
- Use-Group 18 Industrial uses which involve considerable danger of fire, explosion or other hazards.

For each use-district, the ordinance specifies those uses or activities which can be permitted in that district. For instance, community facilities like schools and local shops are permitted in a residential district. The ordinance distinguishes between types of industrial uses by laying 'performance standards' covering noise, vibration, smell, smoke, fire, explosive hazards and glare or heat. It also specifies the off-street parking and loading requirements of all use.

The zoning law achieves density control over development by specifying the height of structures, minimum depth of street, front and rear yards, minimum lot sizes and frontages and percentage of lot to be built upon. Building bulk is controlled through floor-area ratio.

Non Conforming Uses

These are the existing land-uses which do not conform with the zoning proposals (e.g., factory in a residential area). Zoning laws attempt sometimes to get rid of non-conforming uses through 'amortization' (i.e., the use should be shifted or brought to the required performance standards within a specified number of years). No compensation is payable for amortization which has been pursued vigorously for such obnoxious uses as tanneries and junk yards. Buildings having non-conforming uses cannot be extended or rebuilt.

Administration and Review

The zoning ordinance is usually prepared in U.S.A. by the planning department of local authority or by a City Planning Commission. After

approval by the city council, the laws are administered by the building permit department of the local authority.

Appeals against orders passed on building applications in pursuance of zoning laws are made usually to a Board of Appeals, a quasi-judicial body, which can grant exemption or 'variances' from enforcement of zoning laws in cases where such enforcement would cause a significant degree of hardship upon a party and when such a relief would not be a notable interference with the aims of the zoning law. Appeals are viewed rather liberally in U.S.A. due to their traditional sympathy for the man who builds something or invests in business. Zoning laws are also amended frequently.

Defects of Zoning Practice

The following remarks on defects of zoning laws are made in the light of American experience with these laws:

1. Zoning has usually been a compromise with existing land-use pattern. It has rarely been used effectively to guide the path and location of new development.
2. Zoning has not been effective normally in moving out non-conforming uses. Lack of provision for payment of compensation for amortization of such uses has been a series limiting factor.
3. Administration of zoning is very cumbersome, requiring considerable personnel. As a result many local authorities have little time and energy left for the more important task of planning.
4. Instead of being a follow-up of a master plan, zoning has often preceded planning. To cite J.L. Taylor, 'it is no wonder that the zoning tail often waves the planning dog'.
5. Zoning sometimes proves to be too rigid a set of regulations to deal realistically with the dynamic, changing urban area. For instance in central areas of cities, there is an intensive mixture of several land-uses and one cannot always designate such areas for a particular use only.
6. Exemptions from operation of zoning laws are granted rather too frequently and almost 90 per cent of appeals are upheld. While development control, like planning, should have a certain degree of flexibility, it should not yield to the play of almost every vested interest. Americans seem to believe that land-use control is 'right in theory but a political foot-ball in operation'.
7. Zoning places emphasis on distinction between uses rather than on relationship that exists between them, which is the real objective in planning.
8. Like the British land-use control system, zoning enforcement officials should have some discretionary power to grant exemptions

in minor cases without burdening Board of Appeal with all such cases.

9. Zoning leads to a degree of social and economic segregation impossible to achieve by any other method and has often been used as a tool for serving the interests of certain classes of people (e.g., higher income 'whites' to the exclusion of Negroes).

In view of these defects, many Americans are themselves reevaluating the utility of zoning practice and some regard it as an incubus to be thrown away before there can be any real progress in planning.

Applicability of Zoning in India

The objective of zoning is normally attained in Indian cities through the enforcement of land-use proposals in the Master Plans and the detailed Planning schemes (which also include scheme bye-laws) for localities needing priority. In cases where delays are involved in preparing detailed planning schemes, it would be convenient to frame zoning laws having different development standards for different areas and this would not take as much time as the former.

However, due to paucity of funds and technical staff, it may not be wise to make promulgation of zoning laws obligatory for all Indian cities and this could be made optional and left to the discretion of the local authority. Our larger metropolitan areas like Calcutta and Madras should have zoning laws at least for key areas.

Adequate provisions must be made either in town-planning act or the municipal act giving powers to local authorities to enact zoning laws whenever they find it appropriate to do so.

BUILDING REGULATIONS

Need for Development Control

'Siutere tuo, ut alienum non laedus' (So use yours that you do not harm another). This principle has been accepted in every civilised society and forms the basis for the development control (or exercise of police powers in the context of urban growth). Control over land subdivision and building construction activity by local authority may appear to be an interference with the traditional property rights and individual liberties but such control is inevitable if chaotic growth of towns is to be avoided.

Building bye-laws, zoning laws, land subdivision regulations and statutory town planning schemes are tools through which 'police powers' are exercised. The primary purpose of these controls has been taken to be 'to promote the health, safety, morals and general welfare of community'.

Image of Buildings Rules

By tradition, the administration of building rules in urban areas of our

country has been the function of municipal bodies. The mention of building rules brings different images to different persons,—to the citizen, it often symbolizes a source of harassment and corruption; to the elected councillor it represents a cause for pressure by prospective voters to interfere with the enforcement of the rules by the executive wing; to the executive officer, it symbolizes a cause for headache and friction with elected members; to the building inspector, they stand for sources of additional income and influence in the town, while, to the town planner, they represent an ideal (*viz.*, the orderly growth of towns). Thus in discussing building rules, we are dealing with a very sensitive area of municipal administration.

Contents and Procedures

Building Rules are usually framed by the State Government or local body under the powers conferred by the municipal act. If framed by the local body, they do not come into force unless approved by Government. The drafts are published for public comments before being finalised.

Building rules specify standards relating to structural safety of building, internal dimensions of rooms, light and ventilation, open spaces to be left on plots around buildings, minimum standards for facilities like kitchen, latrine, bathroom and sanitation. Building rules are applicable to all sites within a municipal area. Under the municipal act, no party can make construction or reconstruction or addition or alteration to a building or compound wall or hut or make a material change in land use without applying in the prescribed manner and obtaining a licence from the municipal body, which takes into account the building rules and other statutory provisions while disposing of the building applications. In some cities, the executive officer of the local body has powers to pass final orders on the building applications while elsewhere this power rests with a Standing Committee set up by the elected body. The State Town Planner (or, in some cases, the appropriate committee of the local body) has powers to grant exemption from the operation of building bye-laws in any cases of hardship. Any building constructed without obtaining permission from the local body or in deviation from approved plans is treated as an unauthorized construction by the local body and appropriate action taken against it through demolition or prosecution in a court or collection of a compounding fee.

Objectives of Building Bye-laws

As mentioned earlier, the enforcement of building rules causes harassment and inconvenience to many. Delays in receipt of orders on building applications and corrupt practices are rampant. Can we throw away this incubus and manage without building rules? An attempt will be made here to identify certain technical considerations, which lie behind some of the provisions in building rules. It would be useful for a Housing Mana-

ger, to be aware of this so that he can enlighten the tenants in this regard and ensure that these rules are not violated. Structural dimensions for walls and foundations are specified in the rules so as to ensure the safety of the residents of the building. Minimum standards relating to side and rear open spaces are laid down in the rules so as to control the coverage in the interests of light and ventilation. Floor space indices and residential densities are also specified keeping in view the capacity of the infrastructure (like water supply and drainage mains for the area and in the interests of light and ventilation). Height of building is regulated primarily on consideration of daylighting for residents of the building and adjoining structures, firefighting requirements, capacity of streets in front for handling traffic and infrastructure. Front open space, apart from ensuring privacy and ventilation for the residents, serves to enhance the aesthetics of the street picture and provides scope for future street-widening. Living rooms must comply with specified minimum dimensions so as to make them functional and healthy for human habitation.

Thus the building rules serve a vital purpose and in fact, the growth of towns and cities in India during the course of this century has been influenced more by the enforcement of building rules, and municipal act and through the activities of city improvement trusts rather than by implementation of master plans which are comparatively a recent phenomenon. The building rules are useful as a tool for implementing certain policies of the Master Plan since, for example, density proposals in the Master Plan for built-up areas cannot be enforced unless incorporated in the building rules indirectly.

To cite an example, the Delhi Master Plan's proposals for reduction of densities in old Delhi city have not been translated into reality because they were not incorporated in the building bye-laws.

Defects in Building Rules

It would be useful for a Housing Manager to be aware of the defects of building bye-laws so that he could make proper representation to local authority in this regard.

1. Most of the standards structural prescribed in these bye-laws are obsolete and uneconomical. In some cases, the building bye-laws, framed more than two decades ago, are still in vogue (e.g., Building Rules 1942 of Madras). It looks absurd to control modern architectural design with these out-dated bye-laws. For instance, these bye-laws often still prescribe a minimum height of 10 ft. for a living room while the said height is not considered absolutely necessary now a days. The minimum thickness for walls, as specified in these bye-laws, is quite uneconomical.

To cite another example, Delhi is perhaps the only metro-

polis in the world which does not allow residential structures to exceed $2\frac{1}{2}$ storeys in height within municipal area except in certain specified area. This has resulted in an extensive sprawl of the metropolis.

These bye-laws need to be brought up-to-date keeping in view modern architectural trends and standards of public hygiene. The Indian Standards Institution has published recently a National Building Code which could be taken into consideration by local authorities in revising the bye-laws.

2. The standards prescribed in the building bye-laws become the maximum to be followed by the developers instead of being the minimum they are intended to be.
3. The standards in the bye-laws with regard to front, side and rear spaces are usually the same irrespective of the size of the plot. For instance, whether the plot is $\frac{1}{12}$ of an acre or $\frac{1}{2}$ an acre, the same 10 ft. rear open space is normally required. Delhi and Bombay are two exceptions in this regard.
4. The standards prescribed in building bye-laws are uniformly enforceable to all parts of the city irrespective of particular needs of any locality. This defect will evidently have to be overcome by framing zones laws or statutory town-planning schemes (inclusive of scheme bye-laws) for specific areas. An excellent device is the Bombay Development Control Rules which incorporates land-use proposals of Master Plan, zoning proposals, subdivision, and building bye-laws.
5. The standards laid down in these bye-laws are usually not tailored to suit the needs of lower income people, who constitute more than 80 per cent of the population of our cities and for whom survival rather than standards is the objective. Local authorities should set apart some areas for low-income housing, wherein the standards laid down should be the minimum possible. Perhaps in some areas, it should suffice if the parties leave a specified percentage of plot as vacant and no other standards need be applied to such cases. For instance, provision of a separate kitchen or bath room or side space could be dispensed within such case. The bye-laws do not facilitate construction of low housing, group housing, high buildings and pre-fabricated housing.
6. There is an increasing awareness in the developed countries that the byelaws should contain standards which are more performance-oriented rather than specification-oriented. There might be practical difficulties in introducing this concept in a big way in bye-laws of our cities but there should be scope for viewing liberally any individual cases of original design, which may not literally be in accordance with the standards of the bye-laws but is satisfac-

tory from a performance point of view.

7. There is often dual control exercised by local body as well as the improvement trust in some cities and the intending developers have to go through the ordeal of applying to both authorities for permission.
8. In large metropolitan areas, there is need to set up an advisory committee consisting of eminent architects or artists, and leading citizens of the city (rather akin to Royal Fine Arts Commission of London) and the opinion of this Committee should be obtained by the local body before passing final orders on applications for erection of high buildings and of developments in vicinity of monuments or historic squares.

A mention must be made finally of the powers conferred by the municipal act on the local authority to enforce demolition of dangerous structures in the city.

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*Place of Zoning and Sub-Divisional Control in Municipal Administration**

P.B. RAI

LAND PLANNING is not limited to the land use map which divides the city into broad categories of land use, like residential use, commercial use, recreational use, industrial use, etc. It is the function of land planning to ensure that the land uses indicated in a land use plan are developed to promote public health, safety and the general welfare of the community and land is utilized in the most appropriate and economical manner. It has also to ensure their continued maintenance over the years. Unless the manner in which each of the land uses have to be developed is laid down, it is possible that even when segregation of land uses is achieved through a land use Plan, each use by itself may create unhealthy conditions so as to constitute a nuisance not only to itself but to the adjacent use and in their cumulative effect detrimental to the welfare of the city as a whole. This may be illustrated as follows.

IMPORTANCE OF LAND PLANNING

In the absence of zoning regulations, residential areas in the central core may be built up very densely with no set-backs or height restrictions, so much so that not only the density of buildings will increase to such a degree that they will cause unhealthy situations but also it will increase density of persons leading to over-crowding and lack of community facilities. This will, in general, lead to deteriorating conditions which may eventually develop into slums. The same may be said about commercial areas where the intensity of commercial use in certain areas may be such that it will generate more traffic than the roads can cope up with and the area may not be able to provide enough parking places and pedestrian movement. In the case of industries, the lack of road widths, density of buildings, incompatible industries adjacent to each other and

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lack of performance standards may very well off-set the advantages sought to be gained by a land use plan which has general proposals for an industrial zone separated from residential area. Similarly, the areas earmarked for recreation in a land use plan may be so used in practice as to create difficulties in providing adequate recreational facilities which are required at various levels for various types of people.

Then there is the danger of individuals or groups of people wanting to develop virgin land in a piece-meal manner. When there are detailed plans available for newly developing areas, these requests may be checked against such plans and permission may be granted or rejected as the case may be. But it may not be possible to have detailed plans for all areas, nor is it advisable to lay down a firm detailed pattern for the future growth of the city, unless it is for land acquired by a Public body which is itself developing the land. It is for this reason that it is necessary that detailed regulations should be available with the city which lays down how parcels of land may be sub-divided and the community facilities and road standards provided in layout plans so that new developments are not only coordinated with each other but also have a high standard.

Regulatory Measures to Effectuate Land Planning

Zoning and sub-division regulations are the tools for effectuating the land use plan. Sub-division regulations lay down how new areas are to be developed in accordance with the land use plan. It is necessary that the proposed developments should take place along sound planning principles with adequate space standards for roads and community facilities. In their absence, sub-standard growth is likely to take place which may require costly corrective measures in future years. Zoning regulations will lay down the land uses and the various standards according to which land plots should be developed, such as, set-backs, height, bulk of buildings and the intensity of land use: floor area ratio, etc., and performance standards. It will also indicate (a) the various types of uses that will be permitted in the different zones of the land use plan, (b) land uses which may be permitted in these zones subject to certain planning conditions being fulfilled, (c) uses which are totally prohibited in each zone.

Sub-division Regulations

When urban growth is taking place at a tremendous pace in the country, it is of the utmost importance that new developments in our cities are in broad conformity with the guidelines set up by the Master Plans. It is also important that the standards of development are such that they are able to provide enough amenities to the people who are going to live there for decades to come. No doubt, municipal byelaws lay down

the requirements regarding the laying of water mains, sewers, drains, grading and surfacing of roads which a developer has to conform to, when a colony is approved by the local authority. But mostly these bye-laws are out-dated and in a growing city are generally of a lower order. Secondly, the requirements of the services are also dependent on the density of development. For example, if an area is being developed at a density of 100 persons per acre then surely, the diameter of the water mains required to be laid down should be of a larger specification than, say, if the density is to be only 50 persons per acre. It is usual in Indian cities not to take into account this significant factor, with the result that, either the water mains are under-utilized, or when the density increases they are over burdened and costly augmentation has to be resorted to. This is the case also with the other services. Hence it is evident that density of development holds the key to the specification of the services required in any layout and good sub-division regulations will lay down these standards of services related to the recommendations in the Master Plan.

The other important aspect that sub-division regulations deal with are the space standards of community facilities like schools, parks and open spaces, shopping and other community requirements and the widths of roads. In order to be able to specify these, the Master Plan should have arrived at a hierarchy of community life where the facilities are provided in groups or individually as various tiers. In bigger cities, these tiers are many and complex but in smaller cities these are few and simple. It would be however unwise to insist on very high standards when the community cannot afford it. On the other hand if the standards are too low, the local body will be burdened at a later stage with the task of finding land for providing the community facilities or be satisfied with over crowded facilities. A fine balance has to be struck between the realities of the present and the good of the future.

The area of each school, the number of schools required for each neighbourhood at various levels, namely, nursery, primary and secondary, based on the percentage of school going children in the population of the city has to be indicated in the sub-division regulation. The area of parks and playgrounds in the neighbourhood for the very young, for the school going children, for adults and for the aged has to be specified, so that, both passive and active recreation for the community is taken care of when colonies are laid out. Shopping facilities for day-to-day needs, as well as for specialized needs have to be catered for. Besides, land reservation for places of worship, libraries, community halls, post and telegraph offices, health centres, cinemas, fire stations, petrol pumps and service industries have to be made at appropriate places if the colonies are to serve the physical and cultural needs of the citizen.

One of the most important standards are those regarding the width

of streets which are categorized according to the functions performed by them. There are residential streets cul-de-sacs, loop streets and service lanes. These open into collector streets which in their turn lead to feeder streets and to major city roads. The widths laid down should be able to perform the function adequately. It would be desirable to indicate the cross-section of each showing the paved width, side walks, drains and the position of service mains and trees.

Zoning Regulations

Zoning tries to protect each use not only from the harmful invasions of other uses but also promotes the most economical and healthy use in each zone. By requiring the spacing of buildings it provides adequate light, air, protection from fire, etc. It prevents overcrowding in building and land and thus facilitates the provision and continued adequacy of water, sewerage, transportation, schools, parks and other facilities that have been provided in the sub-division regulations mentioned earlier.

The establishment of use zones and the spelling out of the various main uses, as well as, ancilliary and incidental uses which may be permitted in each use zone is primary to any zoning regulations. But these alone will not be adequate. It should also lay down the specific conditions that should be satisfied before certain uses can be allowed by the Planning Authority in a particular use zone. It should specify parking and other standards that are the prerequisites of orderly development.

Zoning regulations are not retroactive as far as existing land uses are concerned but have been upheld by the courts if they have provided clauses which will gradually eliminate non-conforming uses without inflicting unreasonable hardships on property owners. Good zoning regulations lay down the time schedule and the priority for such removal of non-conforming uses. In any such scheme of removal, the elimination of noxious and nuisance industries from residential areas should be the principal aim. Prevention of extension and intensification of non-conforming uses are by themselves disincentives for the continuation of these uses in undersirable locations, but if these are coupled with positive incentives like provision of alternative plots where water and power are available, loan for relocation, etc., then the task will be easier when once the initial resistance is got over by enlightened public relationship established by the planning body.

The provisions regarding density, coverages of building plots, floor area ratio, setback and other requirements are not only of particular application to different areas of the city but also vary from city to city according to the type of development envisaged for a particular area or the type of city envisaged in the Master Plan. It would be wrong to have the same set of regulations for all areas in the city and different types of cities. For example, the core areas or areas around work places

will have more intensive use of land because transportation overheads are less here and land values are high. Unless the zoning provisions allow more intensive use of residential areas in the core and enforce the exclusive use, invasion by commercial uses into residential areas cannot be stopped. Similarly, in the designated commercial zones, intensive use commensurate with parking needs and road capacities have to be provided for so that adequate areas are available for them in places easily accessible by the people who have to use them. Then again, the floor area ratios for the city of Delhi may not be suitable for a medium-sized city or a small town where the intensity of land uses need not be the same.

Administration of Land Planning Regulations

These regulations are to be administered in a different manner, than say, building bye-laws. The latter are rigid and applied uniformly, whereas zoning and sub-division regulations are different for different zones and areas and are applied with a view to achieving quality as well. It would be next to impossible to lay down rigidly and spell out specifically all the things that go to make out a good lay-out. However, the necessity exists of laying down more specification for the guidance of the developer and the people administering the regulations who may otherwise appear arbitrary in their decisions. Thus there is a necessity for a small committee of experts to deal with administration of sub-division regulations whose chief aim should be to inspire in the developer a high standard of development rather than poor quality lay-outs satisfying all the quantitative aspects of regulations. There are very many cases of lay-outs satisfying the regulations on road widths and quantitative aspects of community facilities, which blindly approved and laid on the ground, have become monstrous affecting adversely the daily life of a large number of people. This is because everything in the layout is otherwise wrong. The intersection of roads, the location of the facilities, their accessibility, their effect on other land uses, etc., pose innumerable problems. It is sometimes difficult for laymen and non-technical people, who are familiar perhaps with building bye-laws to understand the finer points in the quality of sub-divisions. However, it is for the qualified technical experts to demonstrate and inspire confidence in such committees by suggesting alternative layouts for consideration but in a situation where all the developers are using non-qualified staff to prepare their layouts, the experts may find themselves unable to help.

Zoning regulations are even more difficult to administer. A certain amount of maturity of understanding of the basic principles of land planning is required in order to be able to deal with conflicting claims of land use.

The planning body should constitute a machinery to deal with zoning

regulation cases consistently, as well as, expeditiously. In allowing a particular use in a particular use zone on special appeal, there may be widespread repercussion which must be anticipated. For this purpose, the planning body may do well to draw up regulations for the location of various specific uses in order to be able to take a comprehensive view. These may not have to be rigid but flexible enough to cater to the needs of a developing town. Any abuses that arise as a result of giving permission to a set of uses or the lack of development due to some very strict regulations have to be corrected and that is why flexibility is advocated.

Another aspect of zoning regulations is performance standards, especially in industry. In designating industry to various locations a certain amount of discretion is called for, so that incompatible industries are not grouped together though they may satisfy the broad category of light industry or extensive industry. Distinction between light and extensive; nuisance and noxious have also got to be made, as well as, small, medium and large. Their requirements of roads, service lanes, parking, water, power, disposal of wastes, etc., vary to a large extent. It may not be possible to lay down all the condition but an enlightened planning body will consider all these aspects while permitting the uses and will take the best advice based on the most modern trends on the subject, keeping in view that promotion of growth is the main aim. Hard and fast rules for administrative convenience or a total lack of control will lead to difficulties at a later stage.

A Board of Zoning Appeals is also required consisting of about 3 members, meeting almost every week, which takes decisions after inspection of sites. The terms of reference of this Board should be clearly defined. It should not be empowered to give a variance of land use not in conformity with the plan but may, however, deal with acute hardship cases, where due to circumstance peculiar to an individual plot, the plot owner desires a variance which if acceded to will not materially affect the amenity of the area or have widespread repercussions elsewhere.

Enforcement of Regulation

Though zoning and sub-division regulations are the most important tools of land planning, any attempt to administer these without a good land use plan will not be in the best interest of the community and will be discriminatory. But when a land use plan is prepared, municipal authorities have an important role to play in administering these regulations. It is necessary that they should also have adequate enforcement machinery to ensure that these regulations are not disobeyed in the actual execution of development and in the use of land and buildings. Unauthorized change of land uses should not be treated lightly. It would be wrong to give the advantage to the law breaker. Planning itself will be in disrepute if such practices are allowed. No compounding of land uses should be

permitted. No flagrant violation of spaces set apart for parking be permitted for other uses. It must be recognized that a plan is no better than the people who administer such plans and municipal administrations have got a great role to play in this vital aspect of administration and enforcement of good land planning.



*Management of City Transport in Ahmedabad**

A. K. NAYYAR

I

AHMEDABAD IS the fifth largest city in India with a population of about 22 lakhs. Municipal Corporation administers an area of about 36 sq. miles. However, the transport service provides transport to the people residing in various localities and industrial areas beyond the corporation limits. It is anticipated that the metropolitan plan will cover an area of 450 sq. miles and population of 45 lakhs by the year 1991.

Till 1947 the transport service in Ahmedabad was owned by private operators. However, on 1st April 1947 as a result of the policy adopted by the State Government to take over the control of city transport services, the transport of Ahmedabad was also taken over by the Municipal Corporation. Initially 60 buses were put into commission and within about three months this small fleet was replaced by 112 large buses with greater carrying capacity. Since then the, Ahmedabad Municipal Transport Service has been acquiring longer buses, having maximum riding comfort, spacious seats, wider gangways and two doors for easier and faster movement of passengers. In the year 1964-65, the average daily number of buses on road reached 351. At that time the average age of buses was less than 4 years. Large scale residential building construction activities took place under the aegis of cooperative housing societies and Government Housing Boards. There has been a steady increase in the population per bus. In the year 1973-74, the number of buses on road was 409. The population per bus had increased to 4,900 from 3,500 per bus in 1964-65. There has been an expansion in the population of city at a steady rate of 4.5 per cent per annum, though the fleet expansion could not be at the same rate.

*Presented at the Seminar on Management of Urban Utilities, organized by IIPA's Centre for Urban Studies, February 12-13, 1976.

drivers, conductors and line staff, as well as stationary required by the employees in the traffic department. It also handles lost properties left over by passengers in the buses.

- (c) *Traffic Repairs and Maintenance and Construction Section (SCD):* This section constructs shelters, bus stands, queue guides, cabins and handles repairs to termini, whitewashing, etc. It also provides temporary queue guides on festival occasions, etc. It paints route boards, destination boards, timing charts, etc., for use by various departments.
- (d) *Depot Section:* This section maintains muster rolls of drivers and conductors and their leave records. It also prepares duty lists and looks after sending the buses on road in time. It also supervises advertisements put in the buses and on bus shelters.
- (e) *Establishment Section:* This section prepares pay bills of the staff working in the traffic department. It also sanctions special disability leave or compensation in case of accident while on duty, etc.
- (f) *Default Section:* This section deals with inquiries, charge-sheets, discharges and dismissals of the employees, who commit defaults while on duty.
- (g) *Accident Section:* This section negotiates with third parties involved in accident cases. It handles all accident matters.
- (h) *Security Squad:* This squad collects and investigates security information. Apart from this, traffic checking is also undertaken by this squad. Whenever there are any religious festivals, student examinations, fairs, processions, etc., special arrangements are being made by this Squad.
- (i) *Flying Squad:* This Squad makes surprise checks on buses and detects defaults, etc. It also intercepts passengers travelling without tickets and brings them to book.

Workshop Department

This department is headed by the Chief Mechanical Engineer and the Works Manager. It is broadly divided into two parts:

- (1) Central Workshop, and (2) Maintenance Depot.

(1) *Central Workshop:* This Workshop handles major repairs such as engine overhauls, body overhauls, fuel injection pumps, gear boxes, differentials, dynamos, starters, batteries, etc. It also manufactures some parts and reconditions old parts. Apart from this, tyre resoling, vulcanizing, upholstering, house wiring and painting of bodies is also undertaken in the Central Workshop. There is also R.T.O. section which repairs the vehicles thoroughly to make them fit for obtaining public carrier fitness certificates.

- (2) *Maintenance Depot:* This Depot has recently been sub-divided

into two groups. Lal Darwaja Group and Station Group. Repairs to buses are undertaken in this depot and buses are given in replacement where necessary. Preventive maintenance is also undertaken. After every six thousand kilometers, 12 buses are checked daily for defects in brakes, engine tuning, clutch, gear, steering, dynamo, starter, battery, water pump, fuel pump, etc. General checking and lubrication are also undertaken after every 3,000 kilometres.

Fuel Section: This section delivers diesel oil and petrol to the Ahmedabad Municipal Transport Service vehicles from pumps located at Lal Darwaja, Wadaj and Jamalpur Depots. It also arranges for payment of vehicle tax, refund of vehicle tax, payment of octroi on chassis purchased, etc.

Stores Department: This department is sub-divided into: (1) Main Stores, and (2) City Depot sub-Stores.

(1) *Main Stores:* This section deals with purchase of the entire stores of the organization. There is an Accounts and Bill Checking Section which checks accounts and bills. There is also an Establishment Section which makes payment to the stores staff. Apart from this, there is a Stores Inventory and Issue Section. Inventory Section has an up-to-date cardex system for keeping an eye on the stock in the Stores. Issue Section delivers stores required by the Workshop on their requisition slips. The salvage section collects old, unserviceable and scrapped parts. These materials are then sold by tenders, etc. It also keeps stock and accounts of reconditioned parts. There is a Receipt Section which temporarily keeps the stores for inspection by the Works Manager before accepting them in the Stores. It also handles rejected parts and claims. There is a property section which purchases stationery, cloth for uniforms and other miscellaneous goods and supplies to various departments according to their needs.

Accounts Branch

The Accounts Branch is divided into three main sections: (1) Payment Section which makes payment, (2) Cash Collection and Booking Section, which collects cash from the conductors and issues tickets to them, and (3) General Section which looks after general correspondence and provident fund accounts of the employees.

Audit Branch

The Audit Branch deals with the internal audit of the entire transport undertaking. There is a system of pre-audit prevalent in this undertaking and all bills have to pass through pre-audit before any payment is made. Even before placing an order for the purchase of goods, comparative statements are audited in this section.

Statistical Branch

Various statistical figures received from the state transport undertakings

in India are studied in this department for comparative analysis. Statistical figures provided by the Workshop, Stores, Traffic and Accounts Departments are scrutinized and other statistical data required by various departments is collected and compiled. Changes in bus routes, new bus routes, payment of R.T.O. tax and such other matters are also handled with the help of traffic department.

Welfare Activities

The transport undertaking of Ahmedabad has also to abide by the provisions of Industrial Dispute Act, Payment of Wages Act, Minimum Wages Act, Factories Act, Workmen's Compensation Act, Motor Vehicle Act, Employees State Insurance Act, Industrial Employment Standing Orders Act, Motor Transport Workers' Act, Employees Provident Fund Act and various rules framed thereunder, in addition to the rules and bye-laws framed under the Bombay Provincial Municipal Corporations Act, 1949.

Ahmedabad Municipal Transport Service Fair Price shop supplies food grains and other necessities to the employees at reasonable rates. The administration of this shop is handled by the employees themselves. Ahmedabad Municipal Transport Service Credit Society looks after the needs of employees by giving them substantial loans at competitive rates of interest and recovers the amount in easy instalments. Medical treatment is also provided to the Ahmedabad Municipal Transport Service staff and their family members. The undertaking also owns 144 staff quarters which are rented at a reasonable rent of Rs. 22.05 per month to the employees. Education allowance is also being given to the employees as per the rules.

Sports and Recreation Club is run for physical, mental and moral development of the employees. It provides sports such as cricket, badminton, carrom, volleyball, kabbadi, football, athletics, etc., for the physical and mental welfare of the employees. Entertainment is also provided to the staff by arranging dramas, cinema shows, musical performances and competitions, etc. A library is run for keeping the employees abreast with up to date news and providing them with books for their recreation during leisure hours.

III

FINANCES

In view of several problems which have to be faced by city transport undertakings finance, have to be handled dexterously so as to conform with the provisions of the Bombay Provincial Municipal Corporation Act which came into force in the year 1949. Several financial difficulties which are

being faced by this undertaking were not anticipated at the time of framing of the Act.

During the course of last 10 or 12 years, many factors have cropped up to jeopardize the financial position of the undertaking. The cost of chassis spare parts, tyres, tubes, diesel, petrol, etc., has increased abnormally. Salaries of the staff have to be paid at ever increasing rates, since they are linked with cost of living index. Apart from this, the rate of interest on loans taken from various sources for purchase of new buses has also increased considerably. Though it is true that a slight increase in the fares has been granted twice in the past by the Government, abnormal increase in the revenue expenditure has taken place, which has made it increasingly difficult to balance the budget. As such, a proposal for fare revision has already been drafted and is pending with the State Government with effect from 1.4.76. In anticipation of this sanction the next years' budget has been framed.

The revenue income expected to be derived during the next financial year is estimated at Rs. 7.03 crores and the revenue expenditure is expected to be Rs. 7.20 crores.

Buses are expected to perform 3.09 crore gross kilometres. Nineteen crore passengers are expected to take advantage of the transport facility during the year, providing an estimated bus fare income of Rs. 6.85 crores. Other miscellaneous income is estimated at Rs. 0.18 crores during the year, making the total of Rs. 7.03 crores.

Establishment expenditure such as Dearness Allowance declared by the Central Government up to March 1975, bonus at the rate of 4 per cent have also been provided in the budget during the financial year. As the buses are likely to perform 3.09 crore gross kilometres, after taking the actual figures of expenditure during the current year into consideration, a provision of Rs. 1.29 crores has been made for repairs and maintenance.

Diesel oil and petrol consumption, calculated on the same basis of 3.09 crore gross kilometres to be performed by the buses would cost Rs. 1.3 crores.

Capital Account: It is planned to purchase 110 buses during the current year at the estimated cost of Rs. 1.87 crores. Arrangements have been made to obtain a loan of Rs. 2 crores from banks or other sources for this purpose. Two depots are also to be constructed during the year 1976-77.

IV

IMPORTANT ISSUES

Last year in September 1975, when I visited the United Kingdom, I

noted that the city transport undertakings were being fully reimbursed for certain types of concessions granted to a section of the citizens. For example, people over 60 years were allowed to travel free during non-peak hour. The transport authority was being fully reimbursed for this purpose. Fuel taxes recovered from the transport undertaking were being ploughed back to the industry by way of refunds. Grants were given for purchase of buses and for provision of infrastructures.

Ahmedabad Municipal Transport Service has to operate economic as well as uneconomic routes. The plan of Ahmedabad city is such that the traffic generated is of a unilateral direction. Because of concentration of commercial and business centres in the heart of the city and the new residential areas far away from the commercial centres the buses have to return empty either in up or down journey. Because of the heavy congestion on roads also, the buses have to move at a snail's pace, which causes lower utilization of bus mileage.

The buses have become very old and as a result the breakdowns are indiscriminate and very frequent. This has also not only resulted into the loss of revenue but has also contributed towards causing considerable inconvenience to the passengers. Eighty buses are over 20 years old, 60 per cent of the fleet has passed the scrapping age of 8 years of 5 lakh kilometres.

Night services for textile workers are operated at a huge loss. The load factor is very poor. Buses are also provided in the early morning. Concessional fares are allowed to about 60,000 students who travel daily and form about 10 per cent of the passenger traffic. The undertaking loses Rs. 40 lakhs on account of these concessions for which it is not reimbursed.

For the transport service of Ahmedabad there is an immediate necessity of about Rs. 10 crores during the course of the next five years, for purchase of about 600 buses. Efforts are being made to tap various sources for acquiring these funds from banks, Municipal Corporation, State Government, Central Government and the World Bank.

The problem of Ahmedabad is not a solitary one. City transport undertakings all over the world suffer from typical problems. As a result, it is almost impossible for any one of them to make a profit. The reasons for such state of affairs are as follows:

1. The speed of buses in the city is very low due to congestion, hence the buses hardly run for 180 kms. in 16 hours, compared to normal usage of 300 to 400 kms., in the case of motor services. Hence, the earning per bus is low in case of city services.
2. Due to low speed the wear and tear on the buses is very high, on account of frequent gear changing and braking, etc.
3. The traffic is unidirectional, *i.e.*, the buses are packed during peak

hours only, while during the rest of the day they stand idle or are running half empty.

4. There is a large population of students who have to be carried at heavy loss at concessional rates.
5. The increase in fares does not keep pace with the rising expenditure due to political pressures.

The most important factor contributing to traffic congestion is peak hour traffic. Out of 6 lakh passengers transported daily by Ahmedabad Municipal Transport Service, 4 lakh passengers are to be transported during peak hours alone. One way to mitigate this problem would be that the Government offices, banks, private firms, mills, merchants, schools, colleges, etc., should come forward to stagger their hours of working so that the heavy load of traffic during peak hours can be spread over a longer stretch of time. A proposal to this effect has been submitted to the Government.

According to the Motor Transport Workers' Act, we are to give rest to the drivers and conductors of the buses after 4 hours. Hence some buses have to be stopped during peak hours. In order to solve this problem we have recently provided additional spare crew to keep these buses moving during the recess hours of the permanent crews.

Some of the measures which we have taken recently to improve the services are given below:

1. Spare crews have been provided at Lal Darwaja to drive the buses whose permanent crews are having their rest. This facility has been partly extended to other bus termini like Station, Maninagar, and Wadaj.
2. Jamalpur depot has been sub-divided into two and provided with approximately 30 additional hands in order to improve the standard of maintenance. By having two depots, better supervision takes place and competitive spirit is generated.
3. Spare buses have been provided at Lal Darwaja, Maninagar, Station and Wadaj in order to replace quickly the buses which break down.
4. New Depots at Sabarmati and Naroda are planned to be constructed during the year 1976-77.
5. An incentive scheme for good attendance and for better collection of money has been introduced for drivers and conductors and incentive prizes will be given every quarter. This scheme is also being extended to workshop and other workers.
6. In order to improve the financial position, the case has been taken up with the State Government to raise the fares to bring them at par with those charged in other cities.
7. The city has been divided into four zones and four breakdown van crews have been detailed to attend to the breakdowns of vehicles

in different parts of the city. In the past, only two breakdown vans were being commissioned. This improvement has considerably reduced the total time lost in attending to breakdowns on road, and there is a saving of nearly 200 bus hours per day, bringing some relief to the travelling public. Each hour saved gives an additional revenue of Rs. 20 and hence the income has gone up by Rs. 4,000 daily.

8. Breakdown vans are being modernized and they are shortly to be equipped with wireless sets. This will reduce the 'down-time' further.

CONCLUSION

In view of the above problems faced by the city transport undertakings all over India and the fact that city transport is a social obligation of the Government, it is suggested that the following points should be seriously considered by the authorities to save the city transport undertakings from drifting downwards.

1. A part of the cost of new buses should be given by the Government as a special grant to the city transport undertakings.
2. Duty paid on diesel oil, petrol, kerosene, lubricants, greases, etc., should be refunded in full by the Government.
3. Cost of construction of bus stations, depots, bus shelters, etc., should be paid as a grant by the Government or Municipal Corporation.
4. Concessional travel facilities given to various categories of citizens such as blind persons, police, students should be reimbursed by the authorities. It is not just to pass on the costs to the transport undertakings.

The replacement policy for buses should be well defined so as to avoid uneconomic operation of dilapidated buses. Such buses are not only unhygienic due to poisonous fumes emitted by them, but also cause lot of inconvenience to the travelling public due to frequent breakdowns. The city bus service cannot become popular unless it operates a reliable schedule. This cannot be achieved, without maintaining a tip-top fleet, and carrying out regular maintenance and replacement.

As regards measures for easing traffic congestion, Ahmedabad is not lagging behind. There is a bus priority scheme in the form of a contra flow system in which buses are allowed on a one way road, on one of the busiest roads of Ahmedabad, to ply both ways. In order to speed up traffic flow, parking has been completely prohibited on very busy roads like Relief Road (Tilak Road) and parking lots have been provided by the Municipal Corporation at reasonable parking fees.

In spite of all the problems, mentioned above, the Ahmedabad Municipal Transport Service is known throughout the country for its efficient operation, reliability, punctuality and courtesy although it is operating one of the oldest fleets in the world (nearly 200 out of 600 buses are over 15 years old). This good reputation is not only due to organization and management but also due to excellent industrial relations, as well as cooperation of the travelling public. Though the waiting times at the bus stands are increasing, the travelling public in Ahmedabad is very patient and the queue system is functioning normally. The main problem is that of finance required for replacement of buses, augmentation of the fleet and construction of depots. This is under active consideration of the authorities and it is hoped that the solution will be found soon.

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*Organization and Management of Delhi Transport Corporation**

A.K. DUTT

BUS SERVICE in Delhi was first introduced in the thirties when the erstwhile Gwalior & Northern India Transport Co. Ltd., was granted permission to do so. Since the resources at the command of this company, which had a fleet of 189 buses only, were limited, it was taken over by the Government of India in May, 1948 and thence to March, 1950, the nationalised service was run under the direct control of the Ministry of Transport, Government of India.

ORGANIZATION SET-UP

The nationalized service was, however, handed over to a statutory body known as the Delhi Road Transport Authority which came into being in April, 1950 by virtue of an Act of the Parliament. The authority was headed by the Chief Commissioner of Delhi as its Chairman and had in all seven members including representatives the then Delhi Municipal Committee, Delhi District Board, etc., and it was charged with the responsibility of providing or securing or promoting the provision of an efficient, adequate, economical and properly coordinated system of road transport services for passengers and goods in the Union Territory of Delhi and in any extended area.

The DRTA was followed by the Delhi Transport Undertaking. It was in April, 1958 that the DRTA was dissolved and merged with the Municipal Corporation of Delhi which was made responsible for operation of road transport service, supply of electricity, supply of drinking water and disposal of sewage. Under the revised set-up all policy matters pertaining to operation of road transport service were dealt with by a Statutory Committee, viz., the Delhi Transport Committee, while the execution of the policies was made the responsibility of the General Manager in whom all the executive functions were vested. The Committee consisted

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of 7 members of whom 4 represented the Municipal Corporation while the remaining 3 were nominated by the Government of India. The Committee was headed by a Chairman and in his absence by a Deputy Chairman both of whom represented the Municipal Corporation. The General Manager of the Undertaking was not a member of the Committee, although he attended its meetings and placed various matters before the same for its consideration and decision for the smooth functioning of the Undertaking. No executive function was vested in the Delhi Transport Committee. The DMC Act, *inter alia*, provided that it should be the responsibility of the DTU to provide an efficient, adequate, economical and properly coordinated system of road transport services for passengers and goods in the union territory of Delhi.

The DTU, however, failed to deliver the goods and the Government of India in exercise of the powers conferred on it by Section 3 of the Road Transport Corporations Act, 1950 (64 of 1950) established the Delhi Transport Corporation having regard to the advantages offered to the public, trade and industry by the development of road transport and the desirability of extending and improving the facilities for road transport throughout the union territory of Delhi and transport service therein and in any extended area.

The new corporation came into being in November, 1971 and was headed by the then Lt. Governor, Delhi as its first Chairman. The Act provides for a Chairman, a Vice-Chairman and a General Manager, besides other members to be appointed by the Government of India. In addition to the Chairman and the Vice-Chairman, the General Manager is also a member of the Board. This position the General Manager did not enjoy in erstwhile Delhi Transport Committee. The rules provide that besides other members to be nominated by the Government of India, the Municipal Corporation of Delhi, the Metropolitan Council of Delhi and the New Delhi Municipal Committee will also have a representative each on the Board.

The Lt. Governor of Delhi continued to be the Chairman of the Corporation till the emergency was imposed when the office of the Chairman was occupied by a non-official member of the Board. Subsequently, he was succeeded by an official member of the Board. The present Chairman of the Board is a technocrat and this is the first time that the office of the Chairman is being occupied by a person who neither represents the bureaucracy nor the non-officials. The office of the Chairman and that of the General Manager have now been merged into one. The Chairman-cum-GM who is the executive head of the Corporation, is thus not only responsible for laying down the policies as the Head of the governing board, but is also responsible for the execution of the same. It will thus be seen that, in order to meet the growing needs of the commuting population of the metropolis adequately,

the Government of India, have from time to time taken various steps, the most important being the reorganization of the agency itself that is charged with the responsibility of providing the transport service.

ADMINISTRATIVE SYSTEM

The Chairman-cum-GM is assisted by a host of officers, the most important of whom are the Dy. General Manager, Traffic Manager, Chief Mechanical Engineer, Controller of Stores and Purchase and Chief Accounts Officer.

The Traffic Manager of the Corporation plays a key role in the administration since he heads the field organization. It is he who, through his assistants, provides the link between the Corporation on the one hand and the travelling public on the other. The role played by the Traffic Department can be described in other ways as well. The Traffic Department of a transport organization can be compared with the Sales Department of manufacturing concern. In the case of DTC, the manufacturing department is the Mechanical Engineering Department which produces the goods, viz., the bus seats and the Traffic Department is the agency that sells the same to the travelling public. Therefore, the Traffic Department, has to make sure that it sells the goods without much loss of time since the goods it markets are perishable in nature and there are no December clearance sales for bus seats.

FIELD ORGANIZATION

The Traffic Department of the DTC is headed by an officer designated as Traffic Manager. He is assisted by a Dy. Traffic Manager and 4 Assistant General Managers (Traffic). Besides these officers, there are as many as 21 Traffic Superintendents and Assistant Traffic Superintendents.

The operational area so far as the union territory is concerned, has been divided into 4 divisions each of which is controlled by an AGM(T), in relation to traffic matters. The Corporation has at the moment 20, depots and another 2 are under construction. More depots are planned to be added in the near future. Thus each AGM(T) has on an average 5 to 6 depots under him and is responsible for all matters that concern not only the travelling public but also the staff members. It will, therefore, be seen that AGM(T) is a very important cog in the wheel of administration. While he is a sort of an ambassador of the Corporation who has to maintain cordial relations with the commuting public, he is also an administrator who has to get the best out of his staff and deliver the goods to the best of his ability under all adverse conditions and situations. He has to ensure that the services of the Corporation are run economically and discipline is maintained at all levels. Since he is respon-

sible for maintenance of harmonious relations, particularly with the operating staff; he has to be extremely tactful in his dealings with the workers in general and labour unions in particular. He has to do the same with the various residents' welfare associations as well because he has to redress not only their genuine grievances but also put up with their imaginary difficulties at times. He has to make the best use of the resources at his command, *viz.*, the rolling stock. He has to deploy the buses and crew in such a manner that he can provide maximum service at minimum cost. The vehicle and crew duty schedules are prepared by the Planning Department of the Corporation under his guidance and advice. Thus the AGM(T) is a manager, a planner, a coordinator and above all an administrator.

The Depot Manager comes next to AGM(T) in the hierarchy. While the AGMs(T) represent the Traffic Department, the Depot Managers represent both Traffic and Mechanical Engineering Departments. Thus while some of the Depot Managers are Traffic officers, other are Engineers. The main function of the Depot Manager is to maintain the fleet stabled in his depot and ensure its regular and punctual outshedding. The Corporation has built a number of new depots during the last 3 years or so and these depots have a stabling capacity of little over 100 vehicles each. Some of the older depots have lesser capacity than 100 and some more. The Depot Manager is assisted by an engineer in the maintenance of the fleet, a traffic officer in the outshedding of buses and exercising control over the same on the road and an Assistant Accounts Officer in financial matters. Various routine maintenance schedules are carried out periodically in the depots. However, all major repairs including engine and chassis overhaul as well as repairs are carried out in the Central Workshop of the Corporation. The Depot Manager is responsible to the AGM(T) for making the fleet available regularly and punctually so that the requirement of the travelling public can be met. He is also responsible to the Assistant Works Manager who is the counterpart of the AGM(T) on the maintenance side for all matters connected with maintenance of fleet. The Depot manager is also responsible for all staff matters including discipline. It is he who takes disciplinary action including removal, termination and dismissal of the staff under his control.

The next in order come the traffic supervisory staff popularly known as Inspectors. The inspectors perform two main roles, one which is to maintain punctuality of service on the road while the other is to prevent leakage of revenue. All important terminal points are manned by inspectors who apart from regulating the services act as guide to the commuters. The inspectors also check the buses and in the course of checking, report any irregularities committed by the drivers and platform staff to the higher authorities.

Next to the inspectors come what may be termed as the real ambas-

sadors of the Corporation, *viz.*, the drivers and conductors, who keep the wheels moving. These people have to work under somewhat difficult situations or conditions since they do not get on the spot any guidance, advice or assistance readily from their superiors unlike others in factories, workshops or offices.

FIELD PROBLEMS, SOLUTIONS AND CO-ORDINATION

So far as the field problems are concerned, the main problem, till the takeover of the erstwhile DTU by the Government of India, was shortage of buses. No doubt, the position has considerably improved with the takeover but a lot is still to be done. The population of Delhi is growing at a rapid pace, its growth rate being higher than that of other metropolitan cities of the country, *viz.*, Bombay, Calcutta and Madras, outdoing the various steps taken by all concerned to solve the transport problems satisfactorily.

Delhi is now one of the major cities of the world. Its present Population is nearly five million. Usually a city of this size in the affluent countries of the world is served by a good network of rapid transit system. Unfortunately, such a system is wanting in Delhi. Not to speak of any underground or elevated railway, Delhi does not have even a network of suburban electric train system with the result that the entire brunt of moving Delhi's teeming millions has to be borne by the DTC alone. The cost of construction of a kilometer of underground railway is reckoned approximately at 150 million rupees now and this figure is sure to go up considerably with the passage of time. Apart from this, an underground railway network cannot be laid overnight. An underground railway system is under construction in Calcutta at the moment. The proposal is to construct a 17 km. long system at an approximate cost of Rs. 2500 million. The construction work was started in the year 1973-74 and till 1979-80 approximately Rs. 700 million will be spent. When the entire system will be commissioned, is anybody's guess. The matter regarding construction of an underground railway system in Calcutta was taken up as far back as in 1948. The cost of construction at that time was estimated at Rs. 30 million per mile or 18 million per km. This will give an idea as to the extent to which the cost of construction have gone up. Many major cities of the world have not been able to expand the system due to this single constraint. Thus to provide network of underground railway system in Delhi is ruled out for several years to come.

There is, however, a proposal to introduce a surface rapid transit system in Delhi by adding another track to the existing Ring Railway, by electrifying the same and improving the signalling system. A Working Group set up by the Ministry of Works and Housing, Government of India has already examined this matter and recommended to the Govern-

ment for its commissioning on top priority basis. If everything goes well, Delhi may have an electrified ring railway in 1980-81. It is proposed to run 109, 9 coach trains a day on this system. The crush load capacity of a 9 coach train will be 3000 and the system is expected to carry between 0.6 million and 1 million passengers a day. The number will progressively go up in due course. It is proposed to have a headway of 6 to 10 minutes during peak hours. If this new system comes up, the pressure on the road transport system will go down substantially. The new system is proposed to be an integrated one, the idea being that a part of the journey would be covered by rail and a part by bus. All this will, however, take time. But even then majority of the commuters will have to travel by bus.

The DTC is presently running approximately 2500 buses including those hired from private operators and carrying well over 2 million commuters a day. Delhi, I have said earlier, will have to depend upon road based system of transport for many years to come because of its peculiar land-use pattern. Delhi is sometimes called a city of gardens, a city of distances, etc. It is also described as a city of pockets. An underground system, thus, is not going to be a paying proposition in a city like Delhi. Therefore, buses will have to take care of Delhi's teeming millions although this will pose many traffic problems. The carrying capacity of a bus is limited. No doubt, this depends upon the size of the vehicle, type of the vehicle *viz.*, single decker, double decker, etc., the maximum carrying capacity of a bus specially designed to cater to the needs of city traffic does not exceed 150 as against that of 3000 of a train on an underground or surface system. A Metropolitan Rapid Transit system can carry between 80,000 to 1,20,000 commuters per hour in each direction at the rate of 40 trains per hour or a train every 90 seconds. It is not possible for a bus system to carry such a large volume of traffic. Moreover, the capacity of the road based system does not depend entirely upon the carrying capacity of the vehicles; it depends upon the capacity of the road also along which a particular service operates and on the road network of the operational area. Further, suitable changeover points in downtown areas are not readily available. In fact, in many major cities of the world not an inch of spare space is available in the city centre with the result the roadbased system creates an awful lot of congestion in the downtown area, particularly in peak hours. The congestion caused by vehicular traffic, apart from fouling the atmosphere, adversely affects fleets and crew utilization and the system is rendered economically not viable, in many cases. All these problems are common to Delhi.

The vehicle population of Delhi has gone up tremendously over the years. The Table on p. 96 indicates this.

<i>Metropolitan city</i>	<i>Registered motor vehicles</i>		<i>Percentage in crease (1972-1975)</i>	<i>Persons per vehicle head</i>
	1972	1975		
Delhi	234857	341222	45.29	10.69

The situation would have worsened had the prices of petroleum products not soared up by about 300 per cent over the last few years. Anyway, the DTC had anticipated all these problems and taken steps to take the bull by the horn. In order to speed up the services, cut down the waiting time and reduce congestion at certain focal points of the city, the route structure was suitably rationalized in 1974. By and large, all cross city routes were split up either at Connaught Circus or Central Secretariat where some sort of changeover facilities were provided. The same was done in respect of other areas in the old city, viz., Railway Station, Red Fort, ISBT, Mori Gate, etc. The original plan in this behalf was drawn up as far back as in 1964 but, for various reasons, it could not be implemented in the intervening years. The changes were appreciated by one and all.

So far as the terminals are concerned, only one has come up. There is a proposal to have three terminals in Connaught Circus complex alone. Similarly, there is a proposal to have another Central Terminal in the Central Secretariat area over and above the one on Church Road, to take care of the growing needs of the travelling public. Other terminals will come up at certain peripheral points viz., Azadpur, Punjabi Bagh, Dhaula Kuan, etc. At the Minto Bridge Station in Connaught Circus, it is proposed to have a combined terminal for the railways and the road transport system. Once these terminals come up, it will be possible for the commuters to changeover safely and conveniently from one bus to another and also from one mode of transport to the other.

In regard to reduction of congestion, certain steps have been taken by removing the road side stops to Church Road Terminal and Rakab Ganj Terminal where idle parking has been banned. The buses are not allowed to wait unnecessarily at these terminals and after the passengers are dropped and picked up, the buses rush back to the starting points. This not only improves vehicle and crew utilization but also cuts down the waiting time of the passengers who in the past had to wait unnecessarily at the terminals. This system has also been introduced at the Connaught Circus, Regal bus stop. The rest of the stops in Connaught Circus will be covered gradually and the time may not be far when there will be no idle parking in Connaught Circus and other places noted for congestion, as well.

I have said earlier that we in Delhi will have to depend upon the buses for our movements for many years to come. Therefore, allout efforts

will have to be made to speed up the services which can be done without increasing the speed limit of the vehicles. This objective will have to be achieved by having reserved lanes for buses, by having flyovers at important road intersections, wherever necessary and possible, by having bridges over the railway lines in the city and by allowing the buses to travel in the opposite direction of the flow of traffic, as is done not only in the advanced countries of West and Japan, but also in some of the metropolitan cities of this country as well. Special traffic lights may have to be installed at important road junctions so as to give the public transport vehicles preference over the car and other modes of traffic and, last of all, by getting rid of the slow moving traffic as much as possible. No doubt, a beginning has already been made, insofar as bus lanes and overbridges are concerned, but no attempt has been made to achieve other objectives. On the contrary, the present policy is to give preference to private car traffic. Frequently, buses are diverted indiscriminately since DTC is an organized body. However, once a bus is diverted, the entire schedule is thrown completely out of gear for the whole day in many cases. This causes a lot of inconvenience to hundreds and thousands of passengers and financial loss to the DTC. Therefore, private car traffic should be diverted before DTC buses wherever possible, so as to reduce traffic congestion, for, it should be remembered that a few DTC buses can carry many more passengers than a large number of private cars. To quote an example, India Gate was thrown open to private car traffic sometime back, but the same was not done in the case of DTC buses with the result the buses are required to make unnecessary detours in order to reach their destinations. Now if the buses are allowed to touch India Gate, as the cars are, there can be a saving of a number of buses and this would not only help the DTC but also the country as a whole since fuel has to be purchased from abroad at a prohibitive price.

The matter I have been discussing all this time, *viz.*, the shortage of buses and want of other modes of transport is universal. Delhi has, however, its own peculiar problems that are not confronted by others elsewhere and the problem, I am referring to, is too well known to everybody in Delhi which is the student-DTC staff relationship. The matter had become a headache for the DTC and the law and order authorities at one time. However, the problem has been tackled suitably with the cooperation and mutual understanding of all concerned, *viz.*, DTC management, law and order authorities, university authorities and student unions. Now an APEX Committee has been set up to look into the transport problems of the students and take remedial measures. It has been ensured by DTC that services to and from the University Campus and other college concentration areas are operated in such a manner that one is not required to wait for long and to meet this objective a large fleet of private buses has been inducted.

The next problem is leakage of revenue. This is also a universal problem. However, this has been tackled to some extent by suitably redesigning the body layout of the buses and also by providing the conductor with a seat. The buses have now been provided with separate entrance and exit gates and passengers are required to enter the vehicle by rear gate and leave by the front gate. The conductor who sits next to the rear entrance gate of the vehicle collects the fares from the passengers who have to go past him in order to leave the vehicle by the front exit gate. Thus neither the conductor nor the passenger gets an opportunity to deceive each other. The Inspectors of the Corporation have also been armed with powers to impose penalties on passengers found travelling without ticket. All these put together have helped the DTC to eradicate the menace of ticketless travel to a substantial extent. However, there is still a lot to be done, but the goal cannot be reached without the active support and cooperation of the travelling public. The DTC cannot solve this problem until and unless the travelling public comes forward.

Next comes the local bodies including the Delhi Development Authority. I feel, the task of the DTC will be much simpler if there is a little more coordination between the DTC and these organizations. To quote an example, DTC is hardly consulted when a new housing estate is developed by the DDA. DTC, however, receives a letter from the residents' welfare association one fine morning for introduction of a bus service from the estate. Now when the DDA plans in advance, DTC has also to do the same. Thus the question arises as to why cannot the DDA take the DTC into confidence when any new scheme is at the drawing-board stage? If this is done, DTC can take better care of the requirements of the residents of the new estates.

Thus it will be seen, it is the coordination that is lacking at all levels. No doubt, some of the problems are tackled at various forums, viz., Traffic Advisory Committee, Lt. Governor's Coordination Committee meetings, etc., there is no permanent machinery to take care of the various problems that are confronted by the DTC and other bodies responsible for providing public utility services. If, therefore, a permanent machinery is set up, it will be possible for the DTC to meet the genuine needs of the residents of Delhi more satisfactorily, at least, for sometime to come. Fortunately, Delhi roads are much better than those in most of the major cities of the developed and affluent countries of the West. Also fortunately, Delhi has fewer cars, as compared to cities like London, New York, Paris, Tokyo, etc. Therefore, if all concerned sit together and extend a hand of cooperation to one another, I am sure, Delhi's transport problems will not elude solution.

**Citizen's Access to Public Utilities in Urban Delhi*

GIRISH K. MISRA

THERE HAS been no time in human history when perfect equity was established in terms of distribution of socio-economic amenities among the masses. Not only that, the inequality has been a part of all man-made systems; there have been attempts also to find out theoretical basis for its existence. It is, nevertheless, agreed that the efficiency of any system lies in ensuring a reasonable level of equity in the distribution of social and economic services and also amenities necessary for their existence.

It has been increasingly realised by the Indian planners that the disparity in the level of services ought to be reduced to a significant extent. Disparities in India exist not only in urban and rural areas but within the rural areas as also within the urban areas. The purpose of the present paper is to examine the intra-urban differences in the levels of different social and economic amenities as exist in urban Delhi. In fact, it is a summary of the results of a study* on distribution of public utilities within urban Delhi conducted by the Indian Institute of Public Administration. In this study an attempt has been made to empirically analyse the differential pattern of availability of three selected public utilities, viz., water supply, electricity and transport in different localities in urban Delhi. The research also probes into the causes of service disparities as between different localities and citizen-groups. This ultimately leads us to consider the various policy options in terms of location, pricing and supply of urban utilities to reduce the differential distribution by evolving guidelines for rectification.

The central problem of gross disparities in the distribution of public utilities has been examined based on certain hypotheses. The identified variables are distance, density, income, age, planned status and land use pattern. The question of availability was examined in a variety of ways.

*G.K. Misra and K.S.R.N. Sarma, *Distribution and Differential Location of Public Utilities in Urban Delhi*, Indian Institute of Public Administration, New Delhi, 1979.

In case of water supply, its availability was examined in terms of: (i) the number of hours of water supply per day (in summer), (ii) the per capita consumption, and (iii) perception about the adequacy of supply as reported by the clients per day in summer for washing utensils/clothes.

The availability of electricity was examined in terms of: (i) the per capita consumption, and (ii) perception of respondents about the frequency of breakdowns in supply (in summer and winter).

As for public transport, the availability was studied in terms of: (i) perception of respondents about the quality of services: (a) punctuality, (b) over-crowding; and (ii) the percentage of respondents using the public transport.

The selection of households was done using a three-stage sample design. The first stage sample was comprised of the selection of a modest number of 15 localities, namely, (i) Moti Nagar, (ii) Khichripur and Kalyanpuri, (iii) Basti Harphool Singh, (iv) Janakpuri, (v) Baird Road, (vi) Ganj Mir Khan, (vii) Old Rajendra Nagar, (viii) Outram Lines, (ix) Uttam Nagar (J.J. Colony, Pankha Road), (x) Aryapura, (xi) Civil Lines, (xii) Kalkaji, (xiii) Vasant Vihar, (xiv) East Rohtas Nagar, and (xv) Sadar Cantt. The second stage sample was comprised of random selection of about 1/5 the number of blocks of mohallas from each of the selected localities for purposes of census enumeration and preparation of up-to-date household lists. At the third stage, a sample of 4 per cent households was drawn at random from the lists of households that were prepared in respect of each of the selected localities. Certain characteristics of the selected 15 localities are given in Table 1.

TABLE 1 A BRIEF SKETCH OF THE SELECTED LOCALITIES IN THE SAMPLE

1. Moti Nagar	Mainly residential, lower middle class. Mostly buildings constructed by Rehabilitation Ministry to rehabilitate the refugees in the post independence period, very close to the Najafgarh Industrial complex.
2. Khichripur-Kalyanpuri	Established in 1976 to resettle the slum squatters removed from different parts of the city, water and electricity facilities are yet to be provided.
3. Basti Harphool Singh	Mixed, partly commercial and partly residential middle income group population. Close to the Sadar Bazar shopping area, old construction.
4. Janak Puri	Mainly residential, comprises Janata, low

(Contd.)

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| | income, middle income group houses constructed by DDA and private houses. This is a very new colony promoted by DDA during the last 10 years or so. |
| 5. Baird Road | A mixed locality with a sizable number of shops buildings mainly constructed either by NDMC or Central Government, very close to Connaught Place, the centre of the city, middle income group colony. |
| 6. Ganj Mir Khan | Mixed locality partly commercial, partly residential low and middle income group population. Located in the walled city. Very old constructions. |
| 7. Old Rajendra Nagar | Mainly residential, middle income locality came up in the post independence period. |
| 8. Outram Lines | Mainly residential, low income locality. Barrack type construction established before 1940's allotted to the refugees from Pakistan. |
| 9. Uttam Nagar | An unauthorized colony, inhabited generally by low income groups. Municipal water and electricity are yet to be provided. |
| 10. Arya Pura | Largely residential adjacent to a major shopping centre. Middle class locality in the older part of the city. Very old constructions. |
| 11. Civil Lines | Mainly residential, a posh locality in the older part of the city. |
| 12. Kalkaji | Mainly residential, middle income locality, set up during the post-independence period. Mostly private constructions. |
| 13. Rohtas Nagar | Mixed land use with a number of households and small scale industries strewn in the residential area, low and middle income population, established in the post-independence period. |
| 15. Sadar Cantt.
(Delhi-Cantonment) | Mixed with a good number of commercial establishments, middle income group, old construction. |
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AN ANALYSIS OF DISTRIBUTIONAL PATTERNS: GENERAL RESULTS

The analysis of the field data provides very many interesting insights into the availability pattern of three selected public utilities both in terms of

their per capita availability and the spatial distribution. The statistical tests carried out confirm some of the widely held views and refute others. In the following paragraphs an attempt has been made to present the major findings of this study in relation to water supply, electricity and public transport.

Water Supply

The present average level of respondents possessing municipal water connections is 72.26 per cent which leaves a significant proportion of population outside the municipal system. Besides a very small section of the respondents (about 12%) having a municipal water connection possesses overhead tank facilities which is an important factor in the stability of water availability. With these inadequacies one would evidently accept a low average consumption of municipal water which works out to be 182.80 litres per day per capita.

The inadequacies in the distributional system are well reflected in the perception of the population using water supply. Out of 442 respondents drawing municipal water, 30 per cent have considered it to be inadequate for drinking, cooking and bathing; 34 per cent for washing of utensils and 40 per cent for washing clothes. Again, according to 40 per cent, the duration of water availability is not adequate. We also note that about 77 per cent respondents experience sudden breakdowns, in general. In summer 47 per cent experience sudden breakdown most of the days while in winter the figure is about 28 per cent. Among the respondents, 31 per cent people take note of advertisements regarding breakdowns, mostly and regularly. It is, however, striking that about 80 per cent do not approach any official authority in this connection.

These average figures stress the fact that a common Delhi citizen is in a pretty bad condition in terms of water supply. It is, therefore, essential to improve the present system of water supply in Delhi.

In the Master Plan formulated by the Delhi Water Supply & Sewage Disposal Undertaking, it has been proposed that an average per day per capita consumption of water of 50 gallons (*i.e.*, 227 litres) is to be achieved by the end of 1981. After that, this has to be raised to 60 gallons. Even if, we take 50 gallons per day per capita as the standard of water supply, we find only posh localities like Vasant Vihar and Civil Lines having adequate supply of water. But, when we look at our field data regarding the perception of respondents about the adequacy of water supply for various domestic uses like drinking, cooking, bathing, washing clothes and utensils, the water supply can be considered satisfactory (adequate in 60% cases) not only in Vasant Vihar and Civil Lines but also in Outram Lines and East Rohtas Nagar. Apart from these localities, even in Moti Nagar, Ganj Mir Khan and Basti Harpool Singh, 80 per cent of respondents consider the water supply as adequate or adequate

to some extent when their average consumption per day per capita varies within a range from 34 gallons (156 litres) to 47 gallons (203 litres). Hence, we can say that the level of achievement envisaged in the Master Plan seems to be quite high. We may, therefore, consider the average figure, *i.e.*, 40 gallons as the norm for examining the adequacy of water supply in Delhi. In this way 40 per cent of population falls below this norm.

While there is a need to improve the general level of the availability of water supply, attention should also be given its distributional aspect. For this, one needs to examine who are worse-off in terms of water availability in Delhi.

Efficiency of water system may be judged in terms of seven factors: (i) percentage of population with municipal water connection, (ii) percentage of population with separate water connections, (iii) average number of taps per household, (iv) percentage of respondents with overhead tank facilities, (v) percentage of population experiencing break downs, (vi) average water consumption, and (vii) perception regarding adequacy of water supply (Table 2).

Considerable inter-locality variations are observed in the value of the above indicators. It is found that cent-per-cent respondents in localities like Baird Road, Old Rajendra Nagar, Civil Lines, Kalkaji and Vasant Vihar have municipal water connections in their portion as compared to East Rohtas Nagar where it is lowest (56.92%). In case of separate municipal water connection, the highest percentage, (90.54) is found in Janak Puri followed by Kalkaji (90.32%). This is the lowest (43.75%) in Arya Pura.

As regards, the average number of taps, it is reported to be maximum (8.13) in Vasant Vihar followed by Civil Lines (6.92) and Janak Puri (4.28) while minimum value occurs in Sadar Cantt. (1.5). Frequency of breakdowns is maximum in Basti Harpool Singh and Sadar Cantt. This is minimum in Uttam Nagar (21.43%) followed by Old Rajendra Nagar (35.56%). The average consumption of water is reported to be highest in Vasant Vihar (236.25 litres) and lowest in Sadar Cantt. (122.34 litres). Regarding respondent's perception about adequacy of water supply for cooking, drinking and bathing, we have stated above that the percentage of respondents considering water supply as adequate is more than 60 in Vasant Vihar and Civil Lines besides three other localities, *i.e.*, East Rohtas Nagar, Outram Lines and Old Rajendra Nagar. On the other hand, the adequacy of water supply is reported to be the lowest in this respect in Sadar Cantt. (10%) followed by Janakpuri (13.51%) and Uttam Nagar (14.29%).

To get an overall picture we constructed a composite index based on the seven indicators (Table 2) as selected above. On the basis of the value or percentage figure of each of these indicators we ranked the

TABLE 2 SELECTED INDICATORS OF WATER SUPPLY AND COMPOSITE RANKING OF LOCALITIES

Sl. No.	Name of locality	Percentage of respondents having municipal water connection	Percentage of respondents having separate municipal water connection	Average no. of taps	Percentage of respondents having overhead tank facility	Percentage of respondents reporting frequency of breakdowns	Average consumption	Percentage of respondents according to their perception regarding adequacy	Composite ranking
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Moti Nagar	95.00	89.47	2.24	2.63	86.84	155.74	81.58	VII
2.	Khichripur and Kalyanpuri	0.00	—	—	—	—	—	—	XIII
3.	Basti Harfool Singh	95.00	60.53	3.42	26.31	100.00	202.66	76.93	VII
4.	Janakpuri	98.67	90.54	4.28	24.32	90.54	141.50	28.37	V
5.	Baird Road	100.00	88.57	2.91	0.00	77.14	140.46	60.00	VIII
6.	Ganj Mir Khan	80.00	53.53	1.86	0.00	93.33	129.78	63.33	X
7.	Old Rajendra Nagar	100.00	82.22	3.89	20.00	35.56	184.50	93.34	II
8.	Outram Lines	63.33	68.42	1.68	0.00	75.86	126.71	100.00	IX
9.	Uttam Nagar	0.00	0.00	0.00	0.00	21.43	0.00	22.58	XII
10.	Arya Pura	80.00	43.75	2.31	0.00	73.68	178.59	68.42	IX
11.	Civil Line	100.00	72.00	6.92	4.00	92.00	227.70	88.00	III
12.	Kalkaji	100.00	90.32	3.87	0.00	90.32	223.19	67.75	IV
13.	Vasant Vihar	100.00	80.00	8.13	66.67	73.33	236.25	86.67	I
14.	East Rohtas Nagar	56.92	48.65	2.81	2.77	55.26	192.16	97.36	VI
15.	Sadar Cantt.	80.00	87.50	1.50	0.00	100.00	122.34	20.00	XI

15 localities, separately. In doing so we gave an inverse ranking in the case of negative indicators like percentage of respondents finding water supply inadequate and frequency of breakdowns. Therefore, the localities with higher percentage figure for negative indicators were given a lower rank. Finally, all these rank values were aggregated to obtain the overall composite index on the basis of which the final ranking of the localities was determined.

First five localities, namely, Vasant Vihar, Old Rajendra Nagar, Civil Lines, Kalkaji and Janakpuri that top in terms of a composite rank value are, by and large, privileged in respect of all the aspects of water supply we have discussed above. This implies that the affluent localities are not only privileged in terms of water consumed per day but in terms of other aspects of water distribution system as well.

We also observe a positive and significant relationship between per capita income and per capita consumption of water (the rank correlation co-efficient 0.746; also see Fig 1). Now it may not be true that higher income people generally get better water services. The fact is that higher income people are in the 'privileged' areas and hence the statistical relationship. The relationship between density of population and per capita consumption of water works out to be negative. The density of population in privileged localities is much less. These localities are all planned residential units established generally after independence. Per capita income in these localities is very high. This to some extent is responsible for creating enclaves of water availability in the midst of scarcity.

There is no significant inter-dependence between income and perception regarding inadequacy. This implies that in the lower income group, there is an unsatisfied demand which decreases with income. It is also observed that with distance from the service reservoir, water availability goes down. This phenomenon occurs because the existing distribution system is such that it is unable to provide adequate pressure at the tail end.

All the water reservoirs are located in the north Delhi. As such, the water reaches to the distant service reservoirs after passing through several bends and due to friction and evaporation the flow of water as well as quantity get diminished.

Size of the family affects adversely the amount consumed per capita. Hence in the larger families, people would have lower water availability. In richer localities generally, the size of family is low.

With the height of the building the availability of water tends to go down. This is because in some areas the system has been designed for water supply to the ground floor and first floor in Delhi. This creates serious problems for the people living in second floor and above.

It is seen that less than 6 per cent of the respondents draw their water from the public stand posts. It has been often argued that these people belonging to the poorest sections of population, need special subsidy.

While the basic purpose of subsidizing water for the vulnerable sections cannot be disputed, there is an urgent need for designing the public policies for distributing basic amenities in more rational and scientific basis.

Electricity

An analysis of the field data brings out clearly that the electricity supply position, in general, is not very satisfactory. While we have 15.7 per cent respondents not having electricity connections, another 15 per cent do without a separate connection. The average per capita consumption figure works out to be 21.36 KWH per month which is rather on the higher side considering the average per capita consumption based on billing data collected from official records for the some number of respondents as covered in the field study which works out to be 11 KWH. This difference of about 3 KWH may be on account of the defects in the reporting methods of the respondents.

If we consider 21 KWH as the norm, we notice that only three localities are above it. In addition, about 77 per cent of the respondents having common connections do not have a separate sub-meter which also brings out the inadequacy of the system.

The average number of fans per household in Delhi is 2.34 which may compare well with metropolitan cities. The same is true for the average number of heaters. The average number of air-cooler is 0.54 which mainly reflects the fact that Delhi houses have a significant proportion of elites. The number of television sets is also slightly on the higher side (one for every two houses) indicating once again the relative affluence of certain sections of Delhi population.

Considering the response of the consumers regarding the frequency of power cuts, etc., there is not much scope for optimism. We have about 52.4 per cent respondents experiencing power cuts frequently and very frequently during summer. During winter the power cuts are less but yet the corresponding percentage works out to be 35.

Despite a large number of electric gadgets possessed by the respondents and the frequent power cuts, the percentage of people taking note of the advertisement in the newspaper about electricity shedding is only 33 per cent. Only 19 per cent of the respondents approach the DESU officials to get the defects rectified.

Another aspect of the inadequacy of the system is reflected in the fact that only one-ten of the people applying for a permanent connection gets it in less than 15 days and that about 90 per cent not having connection did not even try to get it. From this one gathers that while on the one hand, there is general shortage of electricity, the scarcity is not being uniformly distributed over the localities. To get a more indepth picture one, therefore, needs to look at the inter locality variations in the electricity availability.

The electricity supply is determined by several socio-economic and technical factors. These are responsible for the shortage of electricity supply for certain sections of Delhi population. Efficiency of electricity system may be judged in terms of seven factors: (i) average per capita consumption, (ii) electricity connections, (iii) average number of electric fans, (iv) average number of heaters, (v) average number of air-coolers and refrigerators, (vi) average number of television sets, and (vii) power cuts during summer season (Table 3).

We find noticeable inter-locality variations in the value of the above seven indicators. It is observed that average per capita consumption is maximum in Vasant Vihar (85.18 KWH) followed by Civil Lines (48.22 KWH) and minimum in Outram Lines (13.33 KWH) whereas there is no electricity connection in Khichripur. Average number of fans is the highest in Vasant Vihar (5.47) closely followed by Civil Lines (5.44) and the lowest in Outram Lines (1.07). But in case of average number of air-coolers/refrigerators, however, Civil Lines (2.76) tops the list as compared to Vasant Vihar (1.13). The lowest average number of air-coolers/refrigerators is in the Outram Lines whereas in Uttam Nagar and Arya Pura there is no air cooler/refrigerator. The average number of television sets is the highest in Civil Lines (1.40) followed by Vasant Vihar (0.73) whereas it is the lowest in Baird Road (0.14).

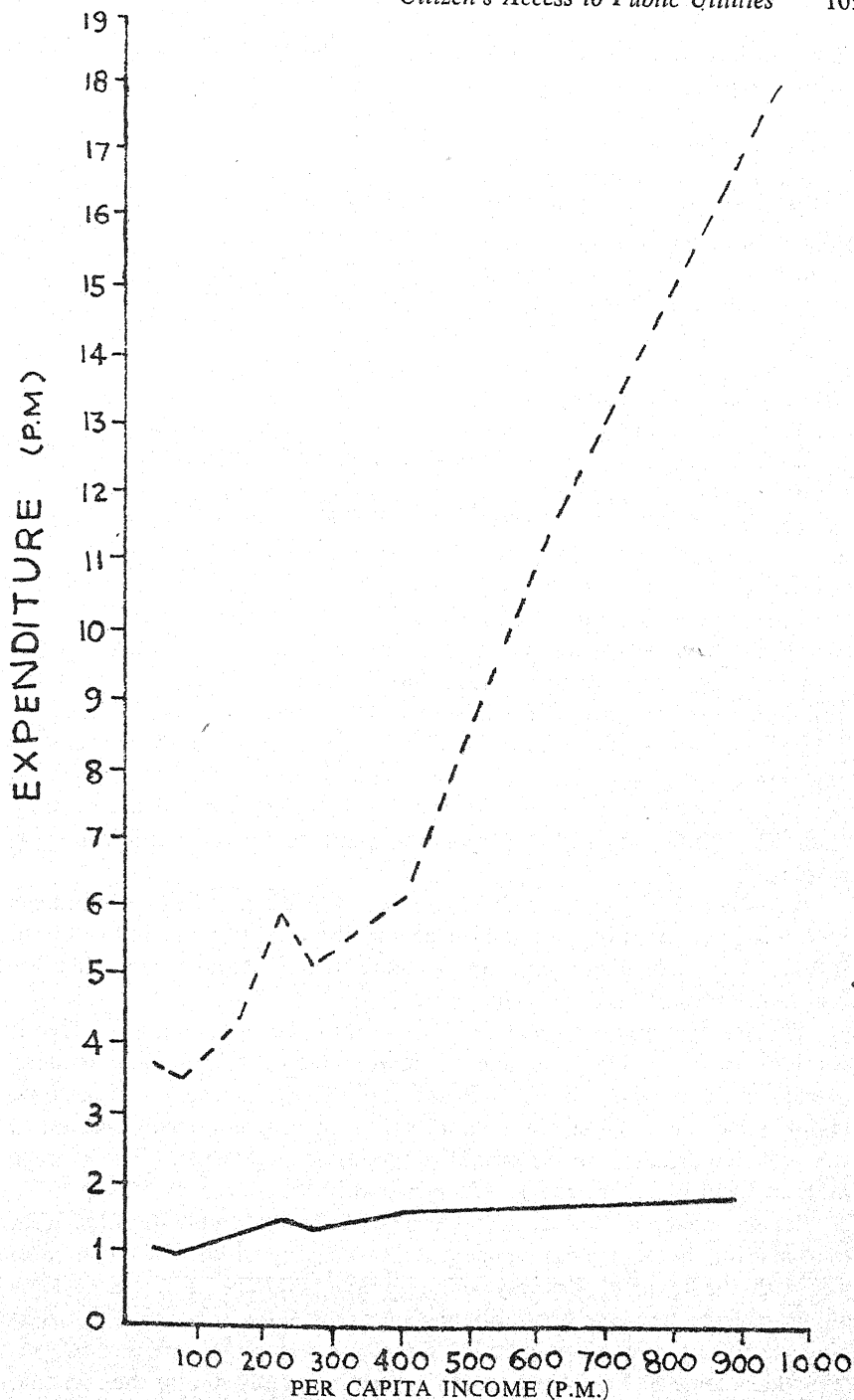
As regards power cuts during summer, these are reported to be very frequent by a large number of respondents in Janak Puri (9.3). In case of Vasant Vihar this percentage is the least (6.7).

This analysis brings out clearly significant inter-locality variations in the electricity supply and the efficiency of the system. It is because of this inequality in the distribution system that a significant portion of Delhi population has to suffer in spite of a reasonable average value for electricity consumption. The difference in the per capita consumption of electricity between localities can be easily explained in terms of the income variations. The association between per capita consumption and per capita income has been found to be significant (Figure 1).

It is almost shocking to find that while in two posh localities, Civil Lines and Vasant Vihar, the average amount spent on electricity is around Rs. 100, all the other localities are below the expenditure of Rs. 35 per month. The components of this high expenditure in the two localities mentioned above can be easily ascertained. There are a large number of fans, air-coolers/refrigerators, heaters and television sets in these localities. One is, therefore, led to the conclusion that high per capita income not only results in the increase in the total expenditure but encourages non-priority uses of electricity. The flat rate system as opposed to the slab rate seems to be squarely responsible for this phenomenon. As the amount spent on electricity is proportional to the amount consumed, there

TABLE 3 SELECTED INDICATORS OF ELECTRICITY AND COMPOSITE RANKING OF THE LOCALITIES

Sl. No.	Name of locality	Average monthly per capita consumption (kwh)	Percentage of respondents having electricity connections	Average no. of fans	Average no. of heaters	Average no. of coolers	Average no. of television	Percentage of Composite ranking	Percentage of respondents power cuts (summer)
(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Moti Nagar	16.11	100.00	1.65	0.08	0.33	0.35	47.00	VI
2.	Khichripur and Kalyanpuri	0.00	0.00	—	—	—	—	—	XIV
3.	Basti Harfool Singh	23.76	94.00	2.84	0.32	0.95	0.61	81.58	III
4.	Janakpuri	20.62	97.33	2.68	0.19	0.52	0.52	93.15	V
5.	Baird Road	14.44	100.00	1.62	0.09	0.20	0.14	5.72	VII
6.	Ganj Mir Khan	15.52	97.14	1.76	0.09	0.15	0.24	47.05	IX
7.	Old Rajindra Nagar	16.67	100.00	2.44	0.27	0.67	0.51	35.56	IV
8.	Outram Lines	13.33	100.00	1.07	0.00	0.10	0.17	20.00	XII
9.	Uttam Nagar	18.66	64.00	1.38	0.08	0.00	0.27	80.76	XIII
10.	Arya Pura	17.65	85.00	2.06	0.00	0.00	0.12	11.76	X
11.	Civil Lines	48.22	100.00	3.44	1.68	2.76	1.40	16.00	I
12.	Kalkaji	19.71	100.00	1.97	0.13	0.74	0.61	38.71	III
13.	Vasant Vihar	85.18	100.00	5.47	1.33	1.13	0.73	6.67	I
14.	East Rohas Nagar	15.86	95.39	1.77	0.03	0.19	0.26	80.65	XI
15.	Sadar Cantt.	16.67	60.00	1.67	0.00	0.67	0.67	33.33	VIII



LEGEND : ELECTRICITY----- WATER _____

FIG. 1 RELATIONSHIP BETWEEN PER CAPITA INCOME AND PER CAPITA EXPENDITURE ON WATER SUPPLY AND ELECTRICITY

is no disincentive to economize at high consumption levels or for non-priority purposes.

Public Transport

The average time spent by the respondents for commuting from the residence to the place of employment is reported to be 35 minutes which is definitely high considering the average distance of only 7.37 km and a large number of private vehicles on the road. In case we take only the respondents using bus or train services, the average travel time works out to be 36.5 minutes. To this has to be added the time to reach the bus stop/railway station from residence and that from bus stop/railway station to the office. The average time spent from residence to bus stop/railway station is 9.06 minutes whereas time spent from bus stop/railway station to office is 9.44 minutes. Assuming that the average distance for these three components is valid for an average Delhi Citizen, he must be spending about 110 minutes in commuting. With this we must consider the additional problem of changing the mode of transport which concerns the 6.5 per cent of the total number of respondents. This clearly brings out that the facilities are not adequate and demand immediate attention.

The problem of commuters using the mass transport system assumes serious dimensions when we consider the fact that about 40 per cent of the population use this mode of transport. It has been observed that about 5.5 per cent of the total number of office goers use bicycle which is a slow and rather dangerous mode of transport in Delhi. The percentage of population walking the distance to reach their offices is very high, *i.e.*, more than 27. All this further highlights the inadequacy of mass transport system.

It has been observed that on an average 26 per cent of the respondents miss bus on account of its non-stoppage and about 32 per cent fail to board it due to over-crowding even after reaching the bus stop or even when the bus comes to bus stop.

The average amount spent on bus or train for reaching the office is Rs. 1.15 per day. This high figure is mainly due to the respondents using private cars, scooters, chartered buses, etc. For the primary school-going children, the role of buses does not seem to be very important because of the walkable distance to the school or special arrangements. The average amount spent is as high as Rs. 9.26 per month.

For secondary school going children public bus takes about 12 per cent load and the average amount spent is Rs. 10 per month which compares well with the figure of primary school-going children. For the college-going students, however, the public bus is the most important mode as about 70 per cent of the load comes to it. Money spent on transport is, however, less which come to Rs. 24 per month. This is mainly due to the fact that the college students are getting student concessional all route bus passes

and being non-earning members of the family would not generally use other modes of transport.

As for punctuality, only 26 per cent of the respondents find the transportation mostly or always punctual. While in the case of over-crowding, only 5 per cent of the respondents feel that the buses are not generally over-crowded which suggests that the most important problem is that of increasing the number of fleet in the transport system and not increasing punctuality. Despite the general feeling about the discourteous behaviour of the staff of the public buses, the average opinion does not seem to be terribly against it. We find that less than 10 per cent of the respondents have some complaints against the behaviour of the staff.

It has been maintained in the above section that there are various components of the overall transport facilities. An attempt has, therefore, been made here to work out a composite index by aggregating the various components by ranking method as has been done for other two public utilities. The indicators chosen for constructing the above index are: (i) number of buses going out of locality, (ii) respondents missing bus due to over-crowding, (iii) missing bus due to non-stoppage, (iv) punctuality, (v) courtesy of the staff, (vi) per cent of respondents having scooters, and (vii) per cent of respondents having cars. (Table 4).

It is noted that localities ranking high up in the case of composite index of transportation are those that ranked high up in case of other amenities as well. Another interesting thing may be noted here is that the ranking for the index of transport facility correlates significantly (rank correlation = $+ .70$; also see Fig. 2) with that obtained for the expenditure on transport by various groups. The latter reflects the paying capacity of the users. One, therefore, cannot escape the evident conclusion that transportation facilities are relatively better in localities in which the paying capacity is also high. Even if we take out the indicators relating to the number of scooters and cars in constructing the index of transportation facilities, the relationship of the latter with the paying capacity does not change significantly (rank correlation = $+ .62$). The test of association clearly reveals that the inter-dependence between per capita income and the punctuality of the bus service, over-crowding and use of public transport by the respondents is highly significant. One can check to confirm that respondents who are relatively well off use the public transport less frequently and face the problem of over-crowding and non-punctuality on lesser number of occasions. This, once again, highlights the need for improving transport facilities for the localities where the income level is not very high.

An examination of the inter-locality variation of these indicators gives insight into these spatial imbalances in the availability of the transportation facilities. We note that for the affluent localities like Civil Lines, Kalkaji, Janakpuri, the average distance is quite high and is above

TABLE 4 SELECTED INDICATORS OF PUBLIC TRANSPORT AND COMPOSITE RANKING OF LOCALITIES

Sl. No.	Name of locality	Percentage of respondents according to time spent on journey (min.)	No. of buses going out of locality	Percentage of respondents going bus due to crowding	Percentage of respondents missing bus due to non-stoppage	Percentage of respondents towards punctuality	Percentage of respondents towards courteous attitude of the staff	Percentage of respondents having scooters	Percentage of respondents having cars	Composite ranking
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	Moti Nagar	40.91	14	27.27	31.82	25.00	12.50	25.00	0.00	XI
2.	Khichripur and Kalyanpuri	60.13	5	65.81	21.05	15.00	10.00	0.00	0.00	XIII
3.	Basti Harfool Singh	17.51	15	66.67	50.00	12.50	15.00	40.00	27.50	VI
4.	Janakpuri	41.93	10	3.70	18.52	14.67	13.33	38.66	2.66	IX
5.	Baird Road	23.60	14	14.29	14.29	48.57	11.43	11.43	0.00	IV
6.	Ganj Mir Khan	22.17	12	45.45	54.54	37.15	2.86	2.86	0.00	VII
7.	Old Rajendra Nagar	35.30	14	0.00	20.00	37.78	6.67	42.22	4.45	I
8.	Outram Lines	33.55	7	66.67	25.00	30.00	16.67	6.67	3.33	XII
9.	Uttam Nagar	45.70	13	0.00	30.00	25.00	10.00	17.50	0.00	X
10.	Arya Pura	24.18	13	0.00	0.00	25.00	5.00	0.00	0.00	V
11.	Civil Lines	23.14	9	0.00	0.00	8.00	0.00	44.00	60.00	I
12.	Kalkaji	26.03	14	56.25	37.50	32.26	9.68	19.36	0.00	VIII
13.	Vasant Vihar	20.03	5	0.00	0.00	26.67	6.67	40.00	33.34	II
14.	East Rohas Nagar	38.42	14	26.47	23.53	35.39	6.15	9.23	0.00	VI
15.	Sadar Cantt.	14.20	6	0.00	100.00	40.00	0.00	30.00	0.00	III

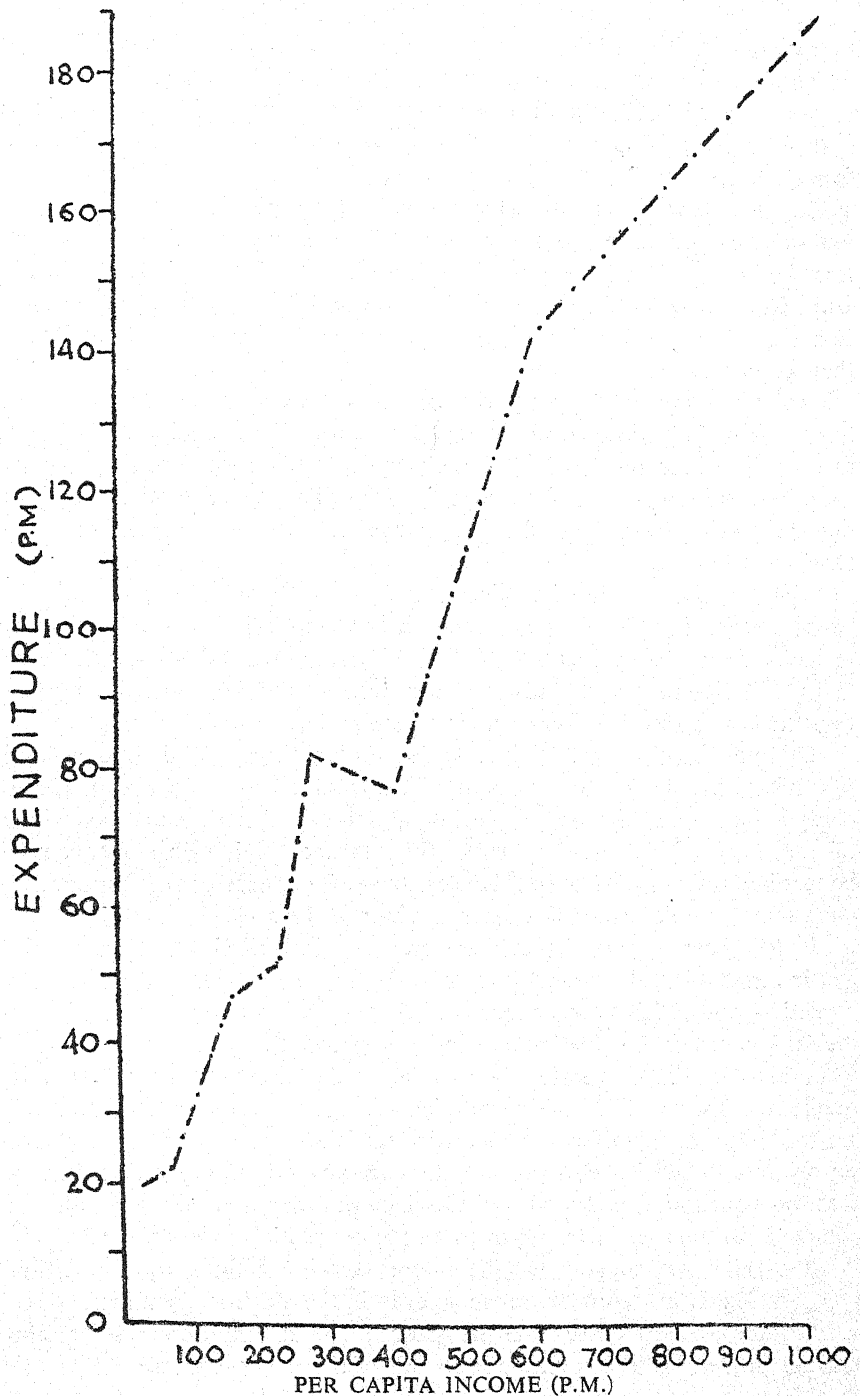


FIG. 2 RELATIONSHIP BETWEEN PER CAPITA INCOME AND PER CAPITA FAMILY EXPENDITURE ON PUBLIC TRANSPORT

the average value. There are, however, certain poorer localities for which the average distance between the place of residence and employment comes very high like Khichripur-Kalyanpuri. From this one may infer that the residential affluent localities have been planned at a distance from the heart of the city which happens to be generally the place of work. An interesting relationship is obtained in the case of per capita and average distance from the place of work which increases from 5.68 km for the income-group of Rs. 20-60 to 9.34 km for the people with income above Rs. 700. This too substantiates the point that the richer sections of Delhi population travel a longer distance to reach their place of work.

An analysis of the quality of the mass transport services available in different localities shows interesting results. We find that in areas like Vasant Vihar and Civil Lines the frequency of missing bus on account of over-crowding or non-stoppage is nil while there are other localities like Ganj Mir Khan where the percentage of bus on account of non-stoppage is 54.

Also, we find that in Civil Lines and Vasant Vihar, the percentage of people regretting the non-punctuality of the bus service is only 13 whereas in Khichripur, the percentage is 55. However, we have localities like Ganj Mir Khan where only 5.7 per cent of the respondents complain that the bus service is either sometime punctual or rarely punctual.

In four localities, *i.e.*, Civil Lines, Sadar Cantt., Kalkaji and Ganj Mir Khan, people do not have complaints (less than 6%) of the respondents complaining regarding general feeling about the discourteous behaviour of the staff of the public buses), the average opinion does not seem to be terribly against it. We find that less than 10 per cent of the respondents have some complaints against the behaviour of the staff.

It has been observed that there are certain localities that are privileged in terms of all these amenities and these are the planned residential localities with a high average income. To test this proposition empirically, the rank correlation values have been computed between the per capita income and the composite indices of water supply, electricity and public transport. The rank correlation values have been given in Table 5. All the values are significant at one per cent level. In the case of water supply and electricity, correlation values are around .92 suggesting thereby that the explanation provided by the income variation alone is almost complete. In the case of transportation, the correlation values are relatively smaller which may suggest that there are certain sections of population less privileged in terms of transport even in the affluent localities. One may, therefore, conclude that in general, the distribution of the public utilities in Delhi is highly biased in favour of the richer localities.

TABLE 5 RANK CORRELATION COEFFICIENTS

<i>Composite Indices</i>	<i>Income</i>
Water Supply	+ 0.9197
Electricity	+ 0.9224
Public Transport	+ 0.6127

(All significant at one per cent level)

STRATEGIES FOR FUTURE

The strategies for correcting the horizontal and vertical inequalities in the provision of the public utilities and their future development must emerge from the analytical frame and the empirical analysis of the study. It has been suggested that all the three public utilities cannot and should not be considered as public goods and, hence, in their distribution the market mechanism cannot be altogether ruled out. However, the distribution of these facilities cannot be left entirely to the market forces as in that case the poorer people would tend to get eliminated in the market. Also, in view of the nature of the wants they satisfy and the low level of consumption mainly among the poorer sections, one should argue in favour of strategies ensuring minimum level of consumption to these people. These should, therefore, be considered as 'merit goods' for this section of population. For the people, in general, too they may be considered as merit goods up to certain consumption level. Beyond this level the market mechanism should be relied upon to take care of the distributional aspects of these utilities. The strategies for future for water, electricity and public transport have been worked out in the light of the above framework.

Water Supply

For any fiscal measure, it would be necessary to determine where do 'privileged' sections of population dwell? What their socio-economic status is and how best they could be taxed without making the pricing system more cumbersome?

First, people with a monthly average income of below Rs. 500 get less than 40 gallons of water per day on an average. Hence no further increase in tax should be proposed. For the other sections of population, a hike in the water tax can be proposed either in general or according to a selective discrimination based on the localities. Certain localities generally affluent, not only show a higher rate of consumption but also enjoy certain other privileges in terms of hours of water supply, number of taps, overhead tank facilities and frequency of breakdowns.

Secondly, there seems to be some scope for raising the water charges at

higher consumption levels. The barest minimum of 20 KL per month per family should be made available without a further hike in the charges. It may, however, be observed that the water consumption increases significantly with income which indicates the possibility of raising funds for financing other developmental activities in the water system through a progressive rate structure. The consumption of water does not remain unchanged at different levels which indicates that the demand for water is not income inelastic. The income elasticity of expenditure worked out to be 0.5281 which is rather high as compared to the other essential goods and services (Table 6). This suggests that with the hike in the water charges, the consumption rate may not actually come down for higher income groups, thereby, not releasing water needed for the poorer localities. However, this would enhance the revenue earning which is badly needed for the improvement of the water system.

Thirdly, there is a case for charging water bills on the basis of the paying capacity of consumers given the present system of revenue collection, etc. this, however, does not seem to be feasible as there are problems in assessing the income level or paying capacity for the consumption of water for non-priority usages. In view of this, indirect methods like a levy on the number of taps beyond a certain limit and secondly, taxing the overhead tank facility, etc., can be proposed.

Fourthly, there is a need to bring locational bias explicitly in the provision of water facilities. This is argued for the correction of the inappropriate bias that has led to an imbalance in the inter-locality provisions of the facilities. It is necessary that the management looking after the water supply system attends to the case of breakdowns, low water pressure, etc., without much delay in all the poorer localities.

Fifthly, it was observed that the water availability decreases significantly with the height of the building. This implies that due to low pressure the people in the second floor or above face water crises. This problem gets multiplied as the distance from the reservoir increases. To tackle the situation one would once again recommend the locational strategy. The municipal authorities should identify the group of households suffering due to constant low pressure, etc., with the help of further micro-level studies and provision of new tanks or reservoirs in the immediate neighbourhood can be recommended.

TABLE 6 REGRESSION EQUATIONS (Double Log Specification)

Log		
Y1=0.1792		+ 0.5281 log X (Water Supply)
Log		
Y2=1.42		+ 0.7632 log X (Electricity)
Log		
Y3=0.3803		+ 0.5706 log X (Public Transport)

Electricity

It has been observed that the disparity in the inter-locality variation of the average monthly expenditure is very high in the case of electricity. This is much more than the corresponding variation for water supply (also public transport). This is despite the fact that while in electricity there is a flat rate system, for water the rate increased with consumption level.

We have two posh localities, namely, Civil Lines and Vasant Vihar where the average amount spent on electricity happens to be Rs. 95.5 and Rs. 117.4 respectively. On the other hand, all the remaining localities are below the expenditure level of Rs. 36 per month. We observe that the electricity consumption increases with per capita income. In view of this, it should be possible to build up a case of progressive taxation based on consumption as it exists for water supply.

The two posh localities mentioned above are such where the per capita consumption of electricity is about three times the average. Apart from per capita consumption they appear to be highly privileged in other aspects of electricity supply. Number of power cuts during the summer or winter are very low here and so is the case of voltage fluctuation.

Considering the different uses of electricity, one may say that non-essential uses are very high in posh localities like Civil Lines and Vasant Vihar. They have an average of 5.4 fans as compared to the average for the total respondents that works out to be only 2.3. Similarly in respect of heaters, television and air-coolers, these localities are highly privileged. The income elasticity of per capita expenditure is very high (0.7632). The usage pattern, too, at high income/consumption levels tend to get diversified. This suggests that there is a case for progressive taxation.

The per capita income/consumption cross classification suggests that the average consumption for the people in the income group of Rs. 20-Rs. 200 is below 20 KWH per capita per month which seems to be the barest minimum. It would not be proper to impose additional taxation on this category of consumers as their paying capacity is very low. In the second slab where we have consumers with average consumption of 25 KWH per capita per month, the corresponding income level ranges from Rs. 200—Rs. 500. One can think of putting an additional tax for this category but this in any case has to be very modest. The respondents in the income group of Rs. 500 and above show a very high figure of per capita consumption where the additional taxation rate could be substantial.

The poor localities are not only poor in terms of their level of electricity consumption but also discriminated again in the case of power cuts, voltage fluctuation and getting temporary or permanent connections. Their calls need to be attended to with at least as much promptness as shown in

the case of elite areas. The load shedding ought to be uniform and so should be the voltage fluctuation. It is only when the spatial strategy is designed keeping the focus on the problem of localities, the imbalances in the distribution can be corrected.

Public Transport

It has been observed that the average time spent by Delhi commuter is abnormally high and immediate effort should be made to reduce it. It is also observed that the average amount spent on transport in various income categories is prohibitively higher which is chiefly due to the use of modes other than mass transportation facilities, *i.e.*, public bus and train.

The bus transport does not seem to carry an adequate proportion of the total number of travellers commuting between office and the residence. The percentage using public bus for going to the place of employment is only 37.28. However, it is noticed that 85.5 per cent of the respondents use bus transport for occasional purposes. For the college students, the percentage is once again very high which ranges above 70.

If we analyse the question as to, why bus transport is not taking its due share with regard to office going commuters, the inadequacies in the system would come to the forefront.

It is the non-availability of bus during office hours, over-crowding, non-stoppage and lack of punctuality in the service that are responsible for people to taking different modes. It has to be noted that one needs to reach office in time and does not generally have extra time in the morning to wait for the transport. While in case of occasional purposes or for reaching the college this may not be so. It clearly brings out the urgent need to improve the transportation services in terms of the fleet punctuality and behaviour of the staff, etc., especially to office-going persons. Besides, these factors generally work against the poorer localities. One should, therefore, conclude that while there is a need for general improvement in transportation services, there exists a more urgent need for improving transport management in poorer localities. This implies that we need to bring in locational bias in designing the strategy for improving transport facilities.

The average amount spent on transport by the earning members (other than the respondents) varies to a great extent. This suggests that in the areas where paying capacity is high, people take resort to modes other than the public buses to cut down the time of travel and avoid the problems due to over-crowding, non-stoppage and also perhaps the discourteous behaviour of the staff. This is also borne out by the fact that while the total time spent in reaching the office from residence is reported to be 34.6 minutes, the average time spent for the bus journey is more than 36 minutes. The total time spent by the commuters using bus would evidently be around 55 minutes which includes 9 minutes for

reaching the bus stop from residence and another 9 minutes in reaching the office from the bus stop.

The total time spent by all the commuters is much less than that of the bus travellers mainly due to the fact that a significant proportion uses a quicker mode of transport. If there is a significant improvement in the bus transportation system with some special services for the office-going traffic, it should be possible to divert people to this mode. As these people have the paying capacity and would otherwise go by scooter, taxi and car and spend a higher sum, there is no reason why significant extra revenue cannot be generated by providing efficient bus services and raising the rates. It should be possible to propose a number of quick bus connections between places of residence and that of the employment during the office hours at significantly higher prices. This would win back a significant proportion of passengers using other modes and also generate extra revenue needed for development activities in this sector.

The proposal for upward revision of the fare rates for a distance of 8 km and above may, however, not necessarily affect the average man on the road. It may be seen that per capita income and expenditure per household are strongly correlated and the elasticity coefficient works out to be 0.5706. Besides, an interesting relationship is observed between per capita income and average distance travelled. For respondents with a per capita income of less than Rs. 200, the average travelling distance is less than 7 km. While in the case of those above Rs. 200, the average distance works out above 8 km. This is due to the fact that the relatively affluent localities are residential and away from the place of work. It can, therefore, be argued that increasing the transportation fare above the distance of 8 km. would effect, to a large extent, the richer localities and the richer sections of the population. On the other hand, there are some localities in Delhi that are far removed from the centre of the city and the residents have to travel a long distance to reach the place of work and yet they have a low level of average income. One, should, therefore, think of introducing some cheap and faster services from the poorer localities where the proposal of increasing the rate structure is being implemented.

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*Overseas Indians in Urban America : A Study of Their Attitudes and Experiences Involving Discrimination in American Society**

MANINDRA KUMAR MOHAPATRA

I

INTRODUCTION

THE HISTORIANS have produced a large body of literature about American immigrants and immigration.¹ Literary writers have also generalized a voluminous literature about the immigrants.² Social Scientists have also been engaged in studies about the immigration policy and the immigrants.³ Among the Social Scientist, Sociologists and Anthropologists have made the most significant contribution to the available literature about the immigrant.⁴ It is the purpose of this paper to present some empirical findings about a small but significant group of new immigrants

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¹A short but select bibliography of historical studies on American immigration may be found in Henry S. Commager, *Immigration and American History* Minneapolis, University of Minnesota Press, 1961, pp. 157-161.

²For example see bibliography in Commager, *op. cit.*

³For example S.M. Tomasi and C.B. Kelly, *Whom We Have Welcomed: The Adequacy and Quality of United States Immigration Data for Policy Analysis and Evaluation*, Staten Island: Center for Migration Studies, 1975; and Kenneth Willis, *Problems in Migration Analysis* Lexington: Heath, 1974.

⁴For a collection of Sociological Studies on Migration see J.A. Jackson (ed.), *Migration*, London, Cambridge University Press, 1969. A psychological perspective of immigrants may be seen in Charles Zwingmann and Maria Ammende, *Uprooting and After* New York, Springer, 1973).

in the United States. We will designate them as 'Overseas Indians'—the people who have migrated to the United States from the Republic of India.

The Indians have migrated overseas for a long time and the literature on Overseas Indians is massive.⁵ In the United States they have been known as the 'East Indians' for the last hundred years or so.⁶ The post-war Britain has utilized the term 'Asian Indians' to include Indians, Pakistanis and Bangladeshis.⁷ There is a growing body of Social Science literature about the 'Asian Indians' in the United Kingdom.⁸ There are some studies about the Indians in Fiji, Mauritius, Guyana, East Indies and elsewhere.⁹

⁵On the history of Indian migrations overseas, see Maurice R. Davie, *World Immigration*, New York, MacMillan 1949, pp. 338-42 and G. Findlay Shirras, "Indian Migration" in Walter Wilcox (ed.), *International Migrations*, Vol. II, (London, Gordon and Breach, 1969, pp. 591-616.

⁶Gary Hess, "The Forgotten Asian Americans: The East Indian Community in the United States," in Akira Iriye (ed.), *The Asian American*, Santa Barbara, American Bibliographica Center, 1976, pp. 157-78. Also see Jogesh Misrow, *East Indian Immigration on the Pacific Coast*, San Francisco, R and E Research Associates, 1971. Also see a bibliography on East Indians in Bruce La Brack. "The East Indian Experience" in *Asians in North America*, Asian American Studies Center, University of California, Davis (in press) and a synoptic paper by Joan Jensen, "East Indians," 1977.

⁷Hugh Tinker, *The Banyan Tree: Overseas Emigrants from India, Pakistan and Bangladesh*, London, Oxford, 1977.

⁸Literature on Asians in Britain is massive. Some major works include the following: Christopher Bagley, "A Survey of Problems reported by Indian and Pakistani Immigrants to Britain," *RACE*, July 1969, pp. 65-76; Community Relations Commission, *Between Two Cultures: A Study of Relationships Between Generations in the Asian Community in Britain*, London: Community Relations Commission, 1976; W.W. Daniel, *Racial Discrimination in England*, (London: Penguin, 1968; Benjamin Heinemann, Jr., *The Politics of the Powerless*, London, Institute of Race Relations, 1972; Dilip Hino, "The Colonial Man's View of the British," in *Race and Immigration: A New Society Social Studies Reader*, London, New Society, 1976; A.M. Kallarackal and Martin Herbert, "The Happiness of Indian Immigrant Children," *New Society*, February 26, 1967, pp. 442-427; Krishna Kumar, "A Child and a Stranger: On Growing Out of English Culture," in Bhikhh Parekh (ed.), *The Immigrant Intellectuals*, London 1976; Duncan Scott, "West Pakistanis in Huddersfield," *New Community*, "Winter 1972-73, pp. 38-43; Michael Lyon, "Ethnicity and Gujarati Indians in Britain," *New Community*, Winter 1972-73, pp. 1-11; Rohit Barot, "VARNA, NAT-JAT and ATAK among Kampala Hindus," *New Community*, Winter-Spring, 1974, pp. 59-66; Ned Levine, "Modes of Adaptation by Asian Immigrants in Slough," *New Community*, Autumn, 1975, pp. 356-65; F.M. Bhatti, "Language Difficulties and Social Isolation: The Case of South Asian Women in Britain," *New Community*, Summer 1976, pp. 118-19; A. Little et. al., "The Education of Immigrant Pupils in Inner London Primary Schools," *RACE*, Vol 9, No. 4, 1968, pp. 439-52.

⁹Some selected studies on Overseas Indians elsewhere include the following: S. Arasaratnam, *Indians in Malaysia and Singapore*, London, 1970; Aghedanand Bharati, *The Asians in East Africa: Jaihind and Uhuru*, Chicago, University of Chicago Press, 1972; N.R. Chakravarty, *The Indian Minority in Bhima: The Rise and Decline of an*

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A variety of reasons suggest that the recent Indian immigrants to the United States have certain characteristic features that deserve a special analytical perspective.¹⁰ The early 'East Indians' in that United States primarily came to Canada as railroad workers who descended southward. Most of them were not knowledgeable in English or with the cultural traits of the American society. This primarily explained some American hostility toward "Hindus invasion."¹¹ Some other early East Indians who have settled in the California communities have primarily taken farming as an occupation.¹² Most new immigrants from India, however, are professionals and their families.¹³ Some of these people came to the United States as graduate students and changed their status to that of an immigrant. Others came to Canada and migrated to the United States. However, a bulk of these people are professionals who came directly from India as immigrants. In the case of some people the immigrant status came as a consequence of marriage to an American resident or citizen.¹⁴ It is a highly educated group of Indian professionals. Very little systematic information is available about this group.¹⁵ Prof. Bruce L.

(Continued from p. 121)

Immigrant Minority, London, Oxford, 1971; Ravindra K. Jain, *South Indians on the Plantation Frontiers in Malaya*, New Haven, Yale, 1970; Adrian Mayer, *Peasants in the Pacific: Fiji Indian Society*, Berkeley, University of California Press, 1972; Kan-naur Chandras, *Racial Discrimination in Canada*, San Francisco, R and E Research Associates, 1976; Michael Twaddle (ed.), *Expulsion of a Minority: Essays on Ugandan Asians*, London, Athlone, 1975; Nasser-bushi Nehru, "Differential Adjustment between Two Indian Immigrant Communities in Toronto, Sikhs and Ismailis." Ph.D. dissertation, University of Colorado, 1974; Yogendra Malih, *East Indians in Trinidad*, London, Oxford University Press, 1971.

¹⁰Joan Jensen, *op. cit.*, especially see the sections dealing with post 1965 immigrants.

¹¹Writings reflecting American attitudes toward the early East Indian immigrants in the United States may be found in the following. This author is thankful to Professor Bruce La Brach for providing the annotations on these rare sources. Agnes F. Buchanan, "The West and the Hindu Invasion," *Overland Monthly*, November 1907; Fred Lockley, "The Hindu Invasion," *The Pacific Monthly*, May 1907, pp. 584-595; Herman Scheffauer, "Tide of Turbans", *Forum*, June 1910, pp. 616-18; "The Hindu: The Filth of Asia", *The White Man*, August 1910, "Hindus: too Brunette to vote here," *Literary Digest*, March 10, 1923, p. 13.

¹²Joan Jensen (1977), *op. cit.*, Also see Jogesh Misrow, *op. cit.*

¹³Gary Hess (1976), *op. cit.*

¹⁴Such indicators are seen from Mahendra Doshi, *Who is Who Among Indians in North America*, New York, Who is Who Among Indians, 1975.

¹⁵There are some scholarly studies and journalistic writings about the new immigrants from India. These include the following: (a) studies on Indian students; (b) journalistic writings, and (c) systematic studies with limited circulates. The studies exclusively dealing with the Indian students in American universities are as follows: George Coelho, *Changing Images of America: A Study of Indian Students' Per-*

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Brack has prepared an extensive bibliography on Overseas Indians in the United States.¹⁶ Some of the studies included in this bibliography refer to historical discrimination against the Overseas Indians.¹⁷ Such studies deal with the conditions of the early Indian immigrants and their difficulties in coming to terms with the host society.¹⁸ Also, there is an extensive documentation of American attitudes toward the East Indians, as expressed in popular press and racist literature.¹⁹ The views of the Indians have also been documented in books, pamphlets and ethnic press.²⁰

II

THEORETICAL CONCERNS

Three major theoretical concerns have provided the bases for empirical analysis reported in this paper.²¹ First, relates to a typology of discrimi-

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ceptions, Glencoe, Free Press, 1958; Richard Lambert and Marvin Bressler, *Indian Students on an American Campus*, Minneapolis, University of Minnesota Press, 1958); Alan Katz, "Changing Indian Students' Perceptions of the Indian Government," *Asian Survey*, March 1977, pp. 64-74; Gurbachan Paul, "The Stay on Return Decisions of Indian Students: A Special Case of International Migration," Ph.D. Dissertation, University of Oregon, 1972; John Niland, *The Asian Engineering Brain Drain*, (Lexington; Heath, 1970; Tai K. Oh, *The Asian Brain Drain*, San Francisco R and E Research Associates, 1977; Rajnikant Gandhi, "Little India: Localism and Cosmopolitanism in an Indian Student Colony", Ph.D. Thesis, University of Minnesota, 1967. Another category of journalistic writings about the new Indian immigrants include the following: Jaya Thadani, "Indians in Washington, *Illustrated Weekly of India*, August 5, 1973, pp. 47-49; Khalid Shah, "Indians in New York," *Illustrated Weekly of India*, April 22, 1973, pp. 19-22; M.V. Kamath, "Puja, Pantsuit and Lata Mangheskar," *Times of India*, 1977. Lastly there are a few scholarly studies about the new immigrants. Most of these are scattered as working papers, dissertations and monography with limited circulation. These include the following: Parmathma Saran, "Cosmopolitans from India," *Society*, Sept/Oct. 1977.

¹⁶Bruce La Brack, *op cit*.

¹⁷*Ibid*.

¹⁸For example see Misrow (1971), *op. cit*.

¹⁹See Note 11 above.

²⁰D.P. Pandia and Kamladeri, "Justice for Hindus in America," *The Christian Century*, March 13, 1940, p. 357; Sant Singh, "Discrimination Against Sikhs in Canada," *Sikh Review*, September 1972, pp. 24-33.

²¹For some theoretical writings on immigrants and race relations see the following: Emory Bogardus, "A Race Relations Cycle," *American Journal of Sociology*, January 1930, pp. 612-617; I.A. Newby (ed), *The Development of Segregationist Thought*, Homewood: Free Press, 1952; Roger Ballard, "Ethnicity: Theory and Experience," *New Community*, Autumn 1976, pp. 196-202; Michael Banton, *Race Relations*, New York, Basic Books, 1967 and Michael Lyon, "Ethnic Minority Problems: An Overview of Some Current Research," *New Community*, Autumn 1973, pp. 329-52; James Beaudry, "The Melting Pot-Myth or Reality," *National Taiwan University Journal of Sociology*, July 1973, pp. 37-50.

nation experienced by the Overseas Indians in the United States. Second, involves explanatory correlates of such experiences by the Indians. It seems important to pay attention to a typology of discrimination. Discrimination against ethnic groups may take a variety of forms. Individuals may be denied housing facilities. Social groups may discriminate against individuals by denying them memberships in their organizations. Another common form of discrimination is refusal of jobs to ethnics. It may also involve harassment of ethnic groups who want to perform religious rites. Temples or such other places of worship may be vandalized. Thus there may be a variety of situations where discrimination may be practiced. This necessitates the typological analysis of discriminating situations. Keeping this objective in perspective, this study has attempted a typological analysis of the situations where the Indians have experienced discrimination.

Secondly, the correlates of discrimination seems a logical follow-up of the typological analysis described above.²² The fact that all people do not discriminate against all Indians under all situations suggests the need to search for explanatory correlates. Some of these correlates may be related to the variations in American political culture. Studies have suggested wide variations in racial attitudes in the United States. The racial attitudes have been explained in terms of political socialized, regional origin, education, ethnicity and a lot of other variables. In the case of the present study, we have focussed our attention on the variables associated with the Overseas Indians. So, we are not trying completely to explain the presence or absence of discrimination. We are merely trying to describe which types of Overseas Indians have more frequently expanded discrimination in American aid under what conditions. With these twin conceptual objectives in mind, we shall proceed to the empirical dimensions of this paper.

Finally, another theoretical concern of this work is to explore the orientations of the Overseas Indians Community in the United States toward protected class status. Given their awareness of the protective measures in the Indian System for Scheduled Tribe and Scheduled Caste it seems highly interesting to pursue this question. How do these people look at this concept of a protected class status for themselves? It is obviously true that most Indians in the United States are from higher caste origin and probably a significant percentage comes from the highest Indian Caste Brahmin. How do they perceive the situation when they would be classified as a protected class? Perhaps their higher social origin would militate against such an idea!

²²For a typological analysis of institutional discrimination see Joe Feagin, "Indirect Institutional Discrimination," *American Politics Quarterly*, April 1977, pp. 177-200.

III

RESEARCH OBJECTIVE AND DATA BASE

The operationalized objective of the empirical research centres around the following questions:

1. What sort of discriminatory situations are experienced by the Overseas Indians in the United States today?
2. What sort of Indians tend to experience discrimination more often in different situations?
3. How do the Overseas Indians feel about a protected class status in the USA?

The East Indian Community in the United States is widely scattered. There are some metropolitan areas with a sizable Indian population. In the absence of adequate resource a representative sample of the Indian immigrants could not be included in this study. It was decided to include Indians who are listed in the biographical directories.²³ In all 1129 persons were purposively selected for inclusion in a mail survey.²⁴ As a consequence of two mailings a total of 212 usable questionnaires were received. All survey data utilized in this paper is limited to this survey of 212 respondents.

IV

OVERSEAS INDIANS: A SOCIAL PROFILE

Table 1 provides a general profile of the survey respondents. The occupational distribution of the respondents indicates a slight over-representation of the academics in this group. This may be due to response bias in a mail survey of this nature. In any case, the professional composition of the group as a whole is clearly indicated by the occupation distribution of this group.

The family size data is indicative of the smallness of the families of the group as a whole; nearly 90 per cent of the group has less than three members in their families. This should be viewed in some contrast with traditional Indian families.

The age distribution indicates that about one half of respondents were between the ages 31 to 40 and the remaining were distributed among the other age group. The group as a whole is over-whelmingly male and is understandable in the light of sample frame. A surprising indicator in this

²³The major source for this listing was Mahendra Doshi (1975), *op. cit.*

²⁴Mail survey as a research technique has greatly improved. Some innovations in mail surveys have been suggested in the following: James House, *et.al.*, "Increasing Mail Questionnaire Response," *Public Opinion Quarterly*, Spring 1977, pp. 95-99.

data is about home ownership. Over 63 per cent of the respondents were home owners. The income distribution is also equally impressive. About a half of the entire group had a total family income of over \$25,000 per year in 1976.

The educational background before entering the United States indicates that 95 per cent of these immigrants had held college degrees before leaving India. About a third of the group had earned an American doctorate.

Two interesting political indicators about this group is about their favorite American and Indian political parties. A great majority of the group (60%) view the Democratic party with favouring the proportion of support for the Republican is as low as 10 per cent. As regards their favorite Indian party, Congress continues to have a higher level of support (27%) compared to Janata (19%).²⁵ It is surprising to note that as many as 44 per cent indicated no favorite party. This is particularly surprising in the light of the data that only about 25 per cent indicated no favorite American Party.

On the whole, the group as a whole projects a very different image than that of the population of India. This might raise interesting theoretical questions about what sort of people migrate? They probably significantly differ from the general population.²⁶

TABLE 1 THE SURVEY RESPONDENTS : A GENERAL PROFILE

(N=212)

<i>Occupation</i>	<i>Percentage of Respondents</i>
(1)	(2)
Academic	25.7
Engineer	16.8
Doctor/Dentist/Veterinarian	20.6
Scientific Worker	8.9
Businessman	6.1
Teacher	4.7

(Continued)

²⁵A study on the partisan identification in India may be found in Samuel J. Eldersveld, "Party Identification in India," *Comparative Political Studies*, October 1973, pp. 271-295; and Manindra K. Mohapatra, "Partisan Identification and Orientation Toward Politicians," *International Behavioral Scientist* (forthcoming).

²⁶For comparative data on other immigrants see Kristian Hvidt, *Flight to America: The Social Background of Danish Immigrants*, New York, Academic Press, 1975; Hyung-Chan Kim, "Some Aspects of Social Demography of Korean Immigrants," *International Migration Review*, Spring 1974, pp. 23-42; Daphne Phillips, "The Effect of Immigration on the Family," *British Journal of Sociology*, June 1975, pp. 218-226.

(Continued)

(1)		(2)
Manager/Executive		4.7
Other occupation		6.5
Missing data		6.1
Total		100.0
<i>Family size</i>		
Single		7.9
Two		9.3
3—5		67.3
Over 5		8.5
Missing data		7.0
Total		100.0
<i>Age distribution</i>		
Under 25		0.5
25—30		7.5
31—35		19.2
36—40		29.9
41—45		17.3
46—50		8.9
51—60		7.5
60+		2.3
Missing data		7.0
Total		100.0
<i>Sex</i>		
Male		88.3
Female		5.1
Missing data		6.6
Total		100.0
<i>Caste origin</i>		
Brahmin		20.8
Non-Brahmin		54.7
Non-Hindus and Caste		18.9
Non-Identifiers		
Missing data		5.6
Total		100.00
<i>Home ownership</i>		
Owner		63.6
Renter		29.0
Missing data		7.48
Total		100 0

(Continued)

(Continued)

(1)	(2)
<i>Family annual income in 1976</i>	
Under \$ 10,000	1.9
10—15	7.0
15—20	12.1
20—25	22.0
25—30	14.5
30—35	21.0
50+	16.4
Missing data	5.1
Total	100.0
<i>Highest education before entering United State</i>	
Some college	5.1
Bachelor's Degree	39.7
Master/Ph.D.	25.2
Professional Degree	22.9
Missing data	7.0
Total	100.0
<i>American education</i>	
Some college	4.7
Bachelor's Degree	4.2
Master	32.7
Ph.D.	28.0
Non-Degree training	6.5
No American education	11.7
Missing data	12.1
	100.0
<i>Favourite Indian political party</i>	
Congress	27.6
Janata	19.2
Other parties	8.9
Missing data	44.3
Total	100.0
<i>Favourite American political party</i>	
Democrat	60.3
Republican	10.7
Other	3.7
Missing data	25.2
Total	100.0

V

DISCRIMINATION EXPERIENCED BY OVERSEAS
INDIANS IN THE UNITED STATES

What sort of discriminations are experienced by the Overseas Indians in the United States? Is there such a thing as Anti-Indian feeling among the people in the United States? In the absence of mass-level attitudinal data, it is difficult to answer these questions. In the case of the present study, an attempt was made by asking survey questions to our respondents.²⁷

Discrimination is a rather sensitive question. In particular, the first generation immigrant minority is likely to be concerned about a survey of this nature. There may be fears about the disclosure of their identity in survey results. A Chicago based study in this area ran into response problems while interviewing South Asian immigrants.²⁸

The Table 2 tabulates the responses of the Overseas Indians with regard to their experiences in the United States. It seems within a varying degree some Indians indicated having expected discrimination in the United States. The highest percentage is indicated in the administrative job category. The second highest is in the technical job category. These two response patterns suggest that in general most Indians are probably discriminated in the job market. The level of discrimination

TABLE 2 TYPES OF DISCRIMINATIONS EXPERIENCED BY THE
OVERSEAS INDIANS IN THE UNITED STATES

N=212

<i>Types of Discrimination</i>	<i>Percentage of Respondents</i>
(1)	(2)
<i>Rental Housing</i>	
Yes	16.8
No	70.1
Not sure	7.5
Missing data	5.6
Total	100.0

(Continued)

²⁷The report of a comparable study in Chicago area may be found in Hekmat Elkhaniyaly and Ralph Nicholas, "Racial and Ethnic Self-designation, Experience of Discrimination and Desire for Legal Minority Status among Indian Immigration in the USA," in Elkhaniyaly and Nicholas (1976), *op. cit.*

²⁸*Ibid.*

(1)	(2)
<i>Buying Home</i>	
Yes	5.1
No	75.7
Not sure	7.9
Missing data	11.3
Total	100.0
<i>Joining Social Groups</i>	
Yes	8.9
No	53.3
Not sure	24.8
Missing data	13.0
Total	100.0
<i>Getting Technical Jobs</i>	
Yes	22.0
No	47.7
Not sure	17.8
Missing data	12.5
Total	100.0
<i>Getting Administrative Jobs</i>	
Yes	36.0
No	30.8
Not sure	20.1
Missing data	13.1
Total	100.0
<i>Start Business/Professional Practice</i>	
Yes	14.5
No	48.1
Not sure	21.5
Missing data	15.9
Total	100.0
<i>Admission to Higher Education Institute</i>	
Yes	10.3
No	68.2
Not sure	12.1
Missing data	9.4
Total	100.0

(Continued)

(1)	(2)
<i>Organizing Religious Ceremonies</i>	
Yes	7.5
No	51.9
Not sure	21.5
Missing data	19.1
Total	100.0
<i>Discriminated in other Situations</i>	
Yes	12.1
No	9.8
Not sure	5.2
Missing data	72.9
Total	100.0

is clearly higher in the case of administrative jobs as compared to the technical jobs.

VI

SOME CORRELATES OF JOB RELATED DISCRIMINATIONS

In this section we shall explore the relationships between job related discriminations experienced by the Overseas Indians and their background attributes.

Firstly, Table 3 provides a cross-tabulation between the American educational background of the respondents and their job discrimination experience. Although only a small number of respondents had earned a bachelor's degree in the United States, none of them reported any job related discrimination in the technical job category and only 12 per cent of them indicated such discrimination in the Administrative Category.

The proportion of respondents with no job-related discrimination consistently goes higher with higher level of education. In the category of non-degree training, 75 per cent reported no discrimination. This category has mostly doctors, dentists and veterinarians. Among the respondents with no American education the level of job related discrimination experience seems to be the highest.

Another interesting trend is consistently higher level of discrimination in the administrative job category compared with the technical job category.

TABLE 3 RELATIONSHIP BETWEEN AMERICAN EDUCATIONAL BACKGROUND OF RESPONDENTS AND THEIR EXPERIENCE IN JOB DISTRIBUTION

(Figures in Percentage)

<i>Type of Job Discrimination</i>	<i>Bachelor's degree N=10</i>	<i>Master's N=9</i>	<i>Ph. D. N=62</i>	<i>Non-Degree training N=12</i>	<i>No American education N=20</i>
<i>Technical Jobs</i>					
Discriminated	0	25	22	16.7	45
Not discriminated	66.7	54	54	75	40
Not sure	33.3	19	24	8.3	15
<i>Administrative Jobs</i>					
Discriminated	12.5	49.2	43.4	25	60
Not Discriminated	37.5	32.2	26.4	50	40
Not Sure	50	18.6	30.2	25	0

Table 4 examines the relationship between the occupational background of the survey respondents and their job related discrimination experience. In general, it appears that the great majority of Engineers (55%) reported no discrimination in getting technical jobs. Seventy per cent of the executives and managers also reported no discrimination in getting technical jobs. However, over a quarter of the academics and scientific professionals reported experiencing discrimination in getting technical jobs. When one examines the comparable data in the administrative job category, there is considerable increase in the percentage of respondents who reported experiencing discrimination in getting administrative jobs.

It is particularly important to note that a majority of the academic respondents (52%) reported discrimination in this category.²⁹ About a third (30%) of the Engineers and scientific workers also report similar experiences. Among the doctors category also there is considerable increase (from 18% to 30%). Even in the category of Executives/Managers, the proportion of reported job discrimination rises from 0 per cent to 40 per cent.

²⁹This may have something to do with the development of academics. A conceptual view of professional development may be found in the Harold Hodgkinson, "Adult Development: Implications for Faculty and Administrators," *Educational Record*, Fall 1974, pp. 263-74. Also see Edward Shils, "The Immigrant Intellectual", in Bhikhu Parekh (ed.), *Colon, Culture and Consciousness: Immigrant Intellectual in Britain*, London, Allen and Unwin, 1974.

TABLE 4 RELATIONSHIP BETWEEN OCCUPATIONAL BACKGROUND OF RESPONDENTS AND THEIR EXPERIENCE WITH JOB DISCRIMINATION

<i>Experience with discrimination</i>	<i>Academic N=53</i>	<i>Doctors, etc. N=43</i>	<i>Engineers N=36</i>	<i>Scientific workers N=19</i>	<i>Teachers N=11</i>	<i>Executives N=10</i>	<i>All respondents N=212</i>
<i>Technical Jobs</i>							
Experienced discrimination	26.4	18.6	19.4	26.3	18.2	0	21.2
Did not Experience	35.8	55.8	55.6	36.8	36.4	70	48.1
Not Sure	26.4	16.3	22.2	21.1	9.1	0	17.9
<i>Administrative Jobs</i>							
Experienced Discrimination	52.8	30.2	36.1	36.8	27.3	40	35.8
Did not Experience	18.9	44.2	13.9	21.1	0	30	30.7
Not Sure	20.8	16.3	36.1	26.3	27.3	10	20.3

VII

CORRELATES DISCRIMINATION EXPERIENCED IN JOINING SOCIAL GROUPS

As the general distribution indicated in Table 2 only a small percentage of the Overseas Indians reported experiencing discrimination in joining non-Indian social groups. It seems to pursue this analysis at some greater length by examining the relationship of certain independent variables to this experience in joining social groups.

Table 5 provides an overview of the relevance of some of these variables. Looking at the variable of home ownership it appears that none of the renter respondents report any experience in joining non-Indian social as opposed to about 14.8 per cent home owners. The data on income provides somewhat similar picture. As the level of income rises, one observes steady increase in the discrimination experience. Those in the \$ 20-25 thousand income bracket report highest percentage of discrimination experience (15%) and even those who are in \$ 50+ income bracket, 12 per cent report similar experience.

The American educational background shows some interesting relationship to the experience in discrimination. Those with no American education, only 4.5 per cent experienced discrimination. And those having American bachelor's degree have none in this category. The

TABLE 5 RELATIONSHIP BETWEEN EXPERIENCED DISCRIMINATION IN JOINING NON-INDIAN SOCIAL GROUP
AND SELECTED VARIABLES

(Figures in percentage)

Experienced discrimina- tion	Homeowners		Annual income							American educational background					
	Owner N=122	Renter N=48	Under \$10,000 N=3	10-15 N=13	15-20 N=20	20-25 N=40	25-30 N=31	30-35 N=37	50+ N=32	Some Coll. N=9	Bache- lor N=9	Master N=58	Ph.D., Non- degree N=11	None N=22	
Yes	14.8	0	0	7.7	5	15	9.7	8.1	12.5	11.1	0	10.3	13.2	9.1	4.5
No	59.0	62.5	38.3	46.2	55	62.5	51.6	67.6	71.9	55.6	77.8	56.9	64.2	72.7	54.5
Not sure	26.2	37.5	66.7	46.2	40	22.5	38.7	24.3	15.6	33.3	22.2	32.2	22.6	18.2	40.9

highest percentage of people (13%) reporting discrimination are among the doctorates and next highest comes in the case of master's degree holders.

It seems those with no American education and having less income and the renters have least experience in social group related discrimination. The higher level of discrimination against the doctorates, master's degree holders seems surprising. It is possible to explain this in another way. Are these people more perceptive in identifying a discrimination experience? Are these people joiners as compared to the others who may be more 'self-segregating'³⁰ and as such do not seek to expand their social activities to non-Indian social groups.

VIII

PROTECTED CLASS STATUS AND ATTITUDINAL VARIATIONS AMONG OVERSEAS INDIANS

Given the level of job related discrimination experienced by the Overseas Indians in the United States, it seems pertinent to explore their attitudes toward a protected class status. The early East Indians were not classified as Caucasians and their legal struggle to be classified as such has been well documented.³¹ In recent years, there has been some attempt to classify the Indians as a minority group. The Association of Indians in America has made a consistent effort to bring about the classification of the Indians as "Asian Indians" beginning 1980 census. This would confer legal minority status upon the Overseas Indians.³²

The survey questionnaire included an open-ordeal question about the protected class status of the Indians in the United States. The responses were coded as: (1) supportive, (2) supportive with reservations, (3) unsupportive. The general finding was that only 25 per cent of the respondents were supportive of this. Another 9.4 per cent were supportive with reservations. Around 38 per cent clearly opposed such classification and the remaining survey respondents either did not comprehend the question or failed to answer the question.

These variations in the attitudinal orientations of the survey respon-

³⁰A discussion about the "self-segregating" trend among some Overseas Indians may be found in Michael Lyon, "Ethnic Minority Problems: An Overview of Some Recent Research," *New Community*, Autumn 1973, p. 347.

³¹On this question the following sources provided detailed information: U.S. Congress. Senate Committee on Immigration. *To Permit the Naturalization of Approximately Three Thousand Natives of India*, hearing before a sub-committee of the Committee on Immigration, 78th Congress, 2nd Session, in Senate Bile 1595, September 13 and 14, 1944. (Reference cited in Bruce La Brach's Bibliography, *op. cit.*)

³²For discussion of the issue of classification of Overseas Indians in 1980 census see *India Abroad*, April 8, 1977, p. 5.

dents were related to a number of variables. Table 6 cross-tabulates the job discrimination related experiences of the survey respondents and their attitudes toward the protected class status. In the category of technical jobs, who did not experience discrimination only about 16 per cent support the idea of protected class status. This is in some control with the responses of those who experienced discrimination in getting a technical job. Their level of support is much higher (nearly twice 31%). This pattern is generally consistent with the administrative job experience also.

TABLE 6 RELATIONSHIP BETWEEN ORIENTATIONS TOWARD PROTECTED CLASS STATUS AND EXPERIENCE WITH JOB DISCRIMINATION

Orienta- tions towards protected class status	All res- pondents N=212	Technical job discrimination			Administrative job discrimination		
		Experi- enced N=45	Did not experien- ce N=102	Not sure N=38	Experi- enced N=76	Did not experien- ce N=65	Not sure N=43
Supportive	25.9	31.1	16.7	36.8	28.9	21.5	27.9
Supportive with reservation	9.4	13.3	7.8	5.3	10.5	9.2	9.3
Un-supportive	38.2	28.9	43.1	42.1	36.8	40.0	37.2

*Percentages do not total 100 due to the exclusion of non-response categories.

Table 7 provides a cross-tabulation between three major social background variables and the orientations of the respondents toward protected class status. These three major variables are: (1) spouse ethnicity, (2) caste identification, and (3) religion identification. Some very interesting patterns seem to emerge from this data.

The respondents with western spouse seem significantly less supportive of protected class status. Whereas a total of about 37 per cent of such respondents are supportive of protected class status with or without reservation, much higher percentage of those with Indian spouse (over 50%) are supportive of the protected class status (with or without reservation).

Caste identification and religion identification variables also indicate a strong relationship. Particularly important is the case of the Caste and Religion resisters. It seems a very high percentage of these groups (44% and 75%) are not supportive of the protected class status for the Indians. On the other hand, about a third of the caste and religion identifiers are supportive of such a status. A majority of the religion non-identifier (66%) oppose the idea and also a majority of caste non-identifiers (56%) also oppose the idea. These trends might indicate that these caste and

TABLE 7 RELATIONSHIP BETWEEN ORIENTATIONS TOWARD PROTECTED CLASS STATUS AND SELECTED BACKGROUND VARIABLES
(in percentage)

Orientations toward protected Class status	Spouse Ethnicity		Case identification			Religion identification		
	Western N=29	Indian N=53	Identifier N=132	Non-identifier N=39	Resenter N=9	Identifier N=143	Non-identi- fier N=30	Resenter N=8
Supportive	27.6	30.6	32.6	15.4	22.2	31.2	13.3	25
Supportive with Reservation	10.3	11.3	10.6	12.8	11.1	11.2	13.3	0
Un-supportive	6.9	13.2	38.6	56.4	44.2	35.7	66.7	75

*Some columns do not total 100 due to the exclusion of non-respondents.

religious identity rejectors may see the protected class status as caste like structure.

Another somewhat intriguing pattern in this respect emerges from Table 8 which cross-tabulates the attitudinal orientations and American educational background of the respondents. Nearly 70 per cent of the respondents are opposed to the idea of protected class status! Among the persons with American Education those having doctorate degrees have the highest level of support for protected class status (31%).

TABLE 8 RELATIONSHIP BETWEEN ORIENTATIONS TOWARD PROTECTED CLASS STATUS AND AMERICAN EDUCATIONAL BACKGROUND OF RESPONDENTS

*(in percentages)**

<i>Orientations toward protected class status</i>	<i>American education</i>		
	<i>Masters N=62</i>	<i>Ph. D. N=54</i>	<i>No American N=23</i>
Supportive	21.0	31.5	21.7
Supportive with reservation	9.7	16.7	8.7
Unsupportive	50	33.3	69.6

*Percentages in some columns do not total 100 due to the exclusion of non-respondents.

Table 9 examines the relationship between the caste hierarchy and the orientations of the respondents toward protected class status. One would anticipate that the Brahmin respondents would be less supportive of a protected class status for the Indians in the United States. In fact, this does not turn out to be the case. In comparison with the Non-Brahmin Hindu respondents, the Brahmins seem more supportive of this (31% as against 25%). However, when qualified support and firm support is taken together, the level of support among Non-Brahmins rises much higher (Brahmin 42%—Non Brahmins 38%). As to the Non-Hindus and Caste non-identifiers, their level of support for the protected class is slightly higher than the Brahmins and Caste-identifying Non-Brahmins.

Based on this trend in the data one might hazard a suggestion that in general, caste hierarchy and orientation toward protected class status do not indicate a very significant relationship. Non-Hindu and Caste non-identify group, however, is generally more supportive of this. Given the weakness of caste data in this study it seems more appropriate to pursue the relevance of other independent variables associated with the attitudinal orientation.

TABLE 9 RELATIONSHIP BETWEEN CASTE HIERARCHY AND ORIENTATIONS TOWARD PROTECTED CLASS STATUS

(in percentages)*

<i>Orientations</i>	<i>Brahmins</i> <i>N=38</i>	<i>Non-brahmins</i> <i>N=108</i>	<i>Non-Hindu and caste</i> <i>Non-identifiers</i> <i>N=33</i>	<i>All respondents</i> <i>N=179</i>
Supportive	31.6	25.0	38.7	25.5
Supportive with reservation	10.5	13.0	6.5	11.2
Unsupportive	42.1	40.7	45.2	41.9

*Percentages do not total 100.0 % due to the exclusion of non-response and other response categories.

IX

CONCLUSIONS

In this working paper, we have examined a limited set of preliminary findings from an on-going study. This implies the tentative nature of the conclusions presented in this section. Nevertheless, the paper identifies few trends that deserve some serious attention by those who are interested in the subject.

Firstly, the study has indicated the feasibility of conducting survey research among a widely scattered American ethnic group. Considering the mail survey, the response rate has been unusually high. This could be due to the background attributes of the group surveyed and its elitist orientation. Perhaps the rate of response could have been still higher if the study would have been an anonymous one. A significant proportion of the respondents had erased their identity from the return envelope indicating their desire to be anonymous. It seems plausible to suggest that among those who did not return the questionnaire, these are individuals we would have also preferred an anonymous survey. Some of the first generation immigrants are probably apprehensive to the abuse of survey research. A Yugoslavia scholar reports similar problems in a comparable study.³³

The methodological experience of this study also poses another issue. The response rate in this survey seemed much higher than the experience of at least two other studies involving the Indian respondents. A variety of factors may have contributed to this situation. The questions used in the study included many 'hot issues' of Indian politics and out of

³³Branko M. Colakovic, *Yugoslav Migration to America*, San Francisco, R and E Research Associates, 1973, pp. 164-70.

the Indian elections had probably created a greater concern for the Indian affairs. The ethnic identity of the research may have had something to do with the higher response rate.

The specific substantive findings of this survey deserves some analytical commentary. The group as a whole projects a profile very different from the general population profile of the people of India. It suggests further evidence to the claim of the other researcher that those who immigrate overseas tend to be different from the native population.³⁴ Further, this group of Overseas Indians is very different from the early East Indians who had settled in the Pacific Coast. It is likely that this group was highly westernized long before entering the coast of the United States in terms of education and attitudinal orientation.³⁵ In this sense, despite their labels as new immigrants, this group simply does not need the kind of services that are needed by the new immigrants of other kinds.³⁶

Their experience in discrimination suggests a varied pattern. A minority of them report experiencing discrimination in American Society in different situations. Most salient experience relate to the job market. Perhaps they feel more discriminated when they are denied administrative jobs.

Most Overseas Indians do not seem supportive of a protected class status for the Indians in the United States.³⁷ Perhaps the spectre of caste ridden Indian society haunch these people. They probably see such a system in terms of Scheduled Caste and Scheduled Tribe quota in India. Yet, there is a sizable minority among the group that supports the protected class concept for the Overseas Indians.

The present study provides another way of looking at the Indian professionals in the United States. Some researchers have expressed their genuine concern about the brain drain from India to the western countries in general and to the United States in particular. But this group of Indian professionals have come here to stay even though some of them may have utilized the circuitous path of graduate study and post-doctoral research for entering the United States.

Finally, the present study primarily analyzed the orientation of Overseas Indians in the United States. It seems pertinent to explore the orientations of Americans toward these new immigrants. How do the American employers look at the Overseas Indians as employees? How do the Americans look at these immigrants as neighbors, friends, colleagues and in

³⁴Victor Ujimoto, "Contrasts in the Pre-War and Post-War Japanese Community in British Columbia," *Canadian Review of Sociology and Anthropology*, February 1976, pp. 80-89; and Daphne Phillips, "The Effect of Immigration on the Family: The Case of Halians in Rural Australia," *British Journal of Sociology*, June 1975, pp. 216-18.

³⁵Useem and Useem, *Western Educated Men of India*.

³⁶See Victor Ujimoto (1976) footnote 34 above.

³⁷Compare with the similar finding in a limited study on Chinese Immigrants. See Dean Lan, *Prestige with Limitations: Realm of the Chinese American Flite*, San Francisco, R and E Research Associates, 1976.

diverse other role relations? Such questions may be answered through systematic empirical research.³⁸

□□

³⁸For comparable studies see the following: Casiano P. Coloma. *A Study of the Filipino Repatriation Movement*, San Francisco, R and E Research Associates, 1974; Roger Harris, *et. al.*, "Anglo-Australian Views of Ethnicity," *Australia and New Zealand Journal of Sociology*, June 1973, pp. 148-51; Mary Jackman "Prejudice, Tolerance and Attitudes Toward Ethnic Groups," *Social Science Research*, June 1977, pp. 145-69; Ruth Johnston, "Western Australian Employer's Attitudes Toward Immigrant Workers," *Australia and New Zealand Journal of Sociology*, February 1974, pp. 50-60; Alan Marsh, "Race, Community and Anxiety," *New Society*, February 1973, pp. 406-408.

Book Reviews

Public Relations in Municipal Government, by C.V. NARASIMHA REDDI, Sharda Publications, Hyderabad, 1978, pp. (Part I) 24, (Part II) 40, (Part III) 21-34.

There are many factors contributing towards the generally poor image of municipal governments in India. Some of these factors are within their control, while the rest of them lie beyond. Their outdated organization and management structure and their inadequate financial resources inhibit the development of their administrative capacity to provide even the bare minimum of municipal services they are expected to extend to citizens in urban areas. Whatever they are able to provide against heavy odds, is not much appreciated, because the style and ethics of 'governance', rather than that of the 'service' hardly enable them to recognize the importance of such appreciation. It is in this context that Mr. Reddi's contribution needs to be seen and his emphasis on the importance of public relations in improving the 'two way communication, i.e., between the municipal administration and the public' appreciated.

The functions of municipal government impinge upon the day-to-day living of citizen in urban area. Since the citizen comes into contact with municipal government more often than any other level of government, the efficiency with which municipal services are extended, has a close bearing on articulation of citizens' attitudes towards their government. In order to provide healthy environments in our cities, municipal governments are strategically placed in not only rendering services, but also educating the citizen for change in individual and social habits which play a crucial role in development and maintenance of healthy environments. Greater the efficiency with which the services are rendered, better is the formation amongst the citizens of thought and habit patterns conducive for the effectiveness of the services. Moreover, in a democratic set-up, a responsive and responsible citizenry can only emerge when the efficiency and effectiveness of municipal services are sought within the framework of elected local government. It is in this context that the substance and approach of public relations—a profession developed as a product of competition in industry and commerce—must seek its relevance to municipal local government wherein democratically elected council itself is a vast

public relations exercise. Nevertheless, the growing complexity of administration and consequent widening of information gap between the citizen and administration require individual and mass media special communication techniques used by public relations to improve the image of municipal government.

The author has enormously rich experience in the field of public relations in government. But it was his posting as the Chief Public Relations Officer in Municipal Corporation of Hyderabad which provides the backdrop to his book. He rightly emphasises the vital role of public relations in municipal government 'not only in informing the public as to what municipal authority is doing but also in enlisting popular participation in civic programmes. In fact, public information and public operation go hand in hand' (p. VIII). If the extent of availability of literature on a subject is an indicator of its importance, the scant attention paid to the public relations aspect of municipal administration in India is brought out by the author by highlighting the fact that 'there is no book dealing with this subject in Indian context'. (p. viii). The author has given a lead and it is hoped that others will follow him soon.

Regarding the coverage of the book, it is divided into three parts. The first part covers topics like theory of municipal government, civic sense, civic ideal, budgeting, organization and functions of PR Department of some selected municipal corporations, Civic House Journal, history of Hyderabad and its municipal corporation all within a space of 24 pages. The second part identifies the relevance of Public Relations to municipal government, and briefly describes the multimedia publicity campaign based on the theme 'Make Ours the Nicest City to Live in,' launched in January 1975 by Municipal Corporation of Hyderabad. The campaign centered around four major problems: cleanliness, dog menace, beggary and encroachments, and it utilized various media of mass communication such as hoardings, press, cinema slides, radio exhibitions, song and drama groups, etc. In collaboration with state and central government media units, the Corporation launched a multi-media education campaign in slums for a period of 10 days on the same theme. The Municipal Corporation of Hyderabad received commendations from the press and there is no doubt about the usefulness of such PR campaigns in educating the masses. The author rightly stresses the finding of the evaluation study that 'mere dissemination of information will not achieve the desired results. Such publicity campaigns will be effective only when action-oriented service schemes are also organized simultaneously for greater impact' (Part II p. 39). In Part III, the author prescribes do's and donot's for public relations officer in municipal bodies.

While the author deserves the appreciation for his 'first attempt on this subject' in writing a book, one would expect sharper focus and depth in the treatment of substance emerging out of his rich experience. It would

have been perhaps much better if the author had given, in an analytical form, more coverage to the campaign launched than dealing with very divergent topics in a summary form. The logic behind the arrangement of topics in each part is not clear. Also, one fails to understand why each part has been separately serialized and why Part III begins from page 21 while Part II ends on page 40. It may well be remembered that just as PR alone is not enough to improve the image of municipal government unless its working improves and it is felt to have improved by the citizens, similarly a foreword by an eminent person is no substitute for the substance and it cannot *per se* enhance its value.

An interesting aspect of the book is that it 'is primarily based on the PR campaign of MCH. The entire campaign, according to the author, was designed at the instance of the Special Officer of MCH and was implemented under his personal guidance during the period when the Corporation was under supersession. While an enterprising administrative leader plays crucial role in improving the municipal administration and his contribution is felt and remembered not only by officials at various levels of administration but also by the citizens, we may as well remember the observation of Geoffrey A.H. Lewis that 'public relation seems to have achieved a somewhat doubtful reputation because of general confusion between the object of the craft and the objects of personal publicity. The latter attempts to gain recognition for an individual by various means, some of which are no more than gimmicks. The former, as the definition provided by the Institute of Public Relations and the words themselves indicate endeavours to establish a relationship between an organisation and the public.' (Public Relations for Local Government).

—D.D. MALHOTRA

Urban Housing in the Third World, GEOFFEREY K. PAYNE, Leonard Hill, London, 1977, pp. 424, Rs. 132.80.

There is found to be varying degree of response to solve the worsening urban housing situation in the Third World countries. However, various plans and programmes evolved in this direction have, by and large, taken care of only a small number of well off urbanites. Majority of the migrants are priced out of the official housing programme because of their weak economic capability and are compelled to squat upon public land. Consequently, they are frowned upon as 'plague spots', 'cancerous growth', and 'disgrace' to the city life and are eventually bulldozed and even dispersed.

Lately there is found to be an upsurge of interest in squatters and their settlements at least in the academic community. The volume under review is a valuable addition to the literature on low cost housing. Taking cue from Liquia, Dwyer and Turner, the author has studied the problem of squatter settlements, low cost housing and settlement planning in the

Third World countries in the backdrop of excessive migration to the cities, consequent urban growth and socio-economic and cultural realities obtaining in these countries. The author has tried to resist from advancing mere facile arguments in criticising the type of planning response to urban housing in the developing countries and has studied the problem in a proper theoretical frame which could be relevant for the conditions prevailing in the Third World countries.

Divided into four parts, the author examines the context of urban growth in Part I and questions the relevance of 19th century Western theories and concepts to the Third World cities of the 20th century. Negative role assigned to the migrants in urban economic and physical growth under the Western concepts has led to benign neglect of squatters and their needs. Two altogether different regional, urban and socio-economic contexts of the developed and the developing countries notwithstanding, the western experience has invariably been used as model to be followed by the developing countries. The author, therefore, tries to evolve a 'theory of urban growth' which could be relevant for the conditions obtaining in the developing world and could change the traditional assumption regarding migrants. This is done by recognizing migrants as the victim rather than the cause of regional imbalance and citing various studies on contribution of migrants to urban growth both in its economic and physical perspective. However, the 'theory of urban growth' at most can be said to be a mere description of the process of urban growth in major cities of the less developed countries. Theoretical overtures could have been made more authentic and useful by analyzing, on the basis of empirical data, the role of low income migrants in employment and income generation in the cities and more specifically in Delhi which happens to be the subject of case study in this volume.

Implanting of Western planning concepts in the Third World countries comes under heavy fire in Part II and the author vividly describes its end products which ironically have intensified the very situation they were intended to prevent. High cost of housing, for example, has priced out the poor to look for an alternative arrangement which the plan intended to eradicate. The author cites several such interesting examples. And yet planning profession in these countries do not seem to be aware of the vicious circle they are creating. Slum clearance operations to beautify the city has simply relocated the slums and aggravated the already grim housings situation.

Part III of the volume is devoted to a case study of housing and settlement planning in Delhi and how inappropriate concepts and strategies have failed to click in an alien socio-economic situation. It brought about sprawling unauthorized colonies and squatter settlements. Based upon the study of social and spatial characteristics in two different types of unauthorized settlements in Delhi, the author explores some of the housing

processes involved and its relationship to wider problems of urban growth. Their location near the place of work, unobtrusiveness and unsuitability for any other use "make it an ideal location for the growth and development of ultra low cost, self-generating communities" (p. 138). Without any institutional help, the squatters created their own housing having a proper spatial structure and activity pattern—which made it a "sophisticated exercise in unconscious urban planning" (p. 138). But this does not necessarily mean that unauthorized settlement is an ideal solution. Nevertheless the squatters "have proved themselves able to come much nearer to providing shelter than attempts of professionally trained architects, planners and public administrators" (p. 180). These may come as startling statements for planning profession and urban plan administrators in India. But a cool introspection may make them aware of the futility of 'housing' and relevance of 'shelter' which is a crying need of the situation obtaining in the less developed countries and can be augmented if appropriate institutional help in the shape of material, financial and other resources are rendered to the urban poor. The author examines the possibilities of such assistance.

Part IV offers alternative concepts and strategies and assesses its significance for future planning and housing policies in the Third World countries.

The volume thus contains laud thinking in the sphere of housing especially for the weaker segments of urban population. No doubt, there is the need to evolve indigenous planning strategies in consonance with local conditions. But the Third World countries, trapped in a state of underdevelopment, have to tackle the problem of low cost housing at a wider plane. It is in this context that one may not agree with the author who seems to be pleading to initiate proper strategies in the urban areas only. Setting up of 'Ring Towns' 'Satellite Towns' and 'rural development' have been rather disapproved by the author is relieving major urban centres of pressures and strains brought about by unabated migration (pp. 42-44). There does not appear to be an end to the prevailing rate of migration to urban areas unless steps are taken to provide alternative avenues of employment in rural areas and small towns. The major urban centres have a limited capacity to accommodate the increasing stream of migration. Viewed in this context, the observation of the author that "Policies to restrict the growth of major urban areas through rural development or more dispersed urban growth has, therefore, limited potentiality within the context of most developing countries" does not seem to be plausible. Nevertheless, the volume is of immense practical value. One can only sincerely hope that it will have some impact on the planning approaches and strategies currently in vogue in the Third World countries. □□

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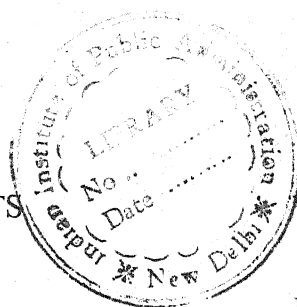
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Demographic Factors Affecting the Nature of Work Participation in an Urbanized Region

P.K. CHUGAN

THE VARIOUS studies concerning urbanized regions, containing population of more than one million, show a general relation among the different socio-economic and demographic variables. These studies are linked with the distance framework towards the periphery of the central city. This study has also been worked out in the mirror of distance framework, but here the principal object is to find out the relations between economic variables, *i.e.*, work participation in economic activities and other socio-demographic variables, *i.e.*, literacy, population density and the sex ratio.

It is observed that the work participation rate in non-primary activities is very high at the heart of the city, where we find highest level of literacy, maximum population density and more unbalanced sex ratio (more males than females). But when we proceed to the outskirts of the city, gradually we observe some changes in the variables under consideration. For illustration, a tendency towards the decline in work participation rate in non-primary activities, is observed not only because of the distance, but is also because of the decline in population density and literacy as also by a rise in the sex ratio. Therefore, in the light of some hypotheses on the socio economic and demographic variables an attempt is being made to establish the relations between the variables in question. An econometric approach has been used for this purpose and linear regression model is worked out.

This study pertains to a particular region of India, *viz.*, Ahmedabad; but there are other metropolitan regions in India and the same analysis can also be worked out for each of the region having a population of one million or more and thereafter a comparative analysis in a systematic form can also be exhibited. It will throw some light on the general relations between the variables in question for a typical metropolitan region. In other words, this will be helpful in the generalization of the relations between the variables taken into consideration.

This type of study has great significance with regard to socio-economic planning in the country which pays comparatively more attention to the regional planning. For the purpose of planning, we need some forecasts about the variables and these existing relations. A brief description in this respect is given in the end of this paper, where emphasis is given mainly on the practical utility of this model.

The main purpose of this study is to find out the relationship between the work participation in economic activities on the one hand and the population density, sex ratio and level of literacy on the other in a given urbanized region. It aims at finding out whether the population density, sex ratio and the literacy rate at a particular distance from the centre affects the nature of the work participation in economic activities or not. For this purpose, linear regression equation has been worked out to find the relations. In other words, there are two principal objects of this paper:

1. To find out the numerical value of the parameters or coefficients of the equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \Sigma$$

where,

X_1 = population density

X_2 = sex ratio

X_3 = level of literacy

X_4 = dummy variable

Y = ratio of non-primary workers to primary workers in percentage.

2. To apply the test of significance to examine whether the estimated coefficients are significant or not.

Moreover, the transport network as yet another variable has also been included in the study and the results are worked out in three steps. In the first stage, known as the aggregate analysis, the model is worked without considering the transportation network separately. In the second stage, the transportation network has been included into the study and the whole region is divided into two cadres. One, which has the direct influence of transportation, known as within-corridor analysis and another, which does not have direct access to these transportation facilities known, as outside-corridor analysis. These corridors are constructed by keeping the distance of 2 miles towards the both side of the each railway line and national highway, which divide the whole region into within-corridor and outside-corridor regions. This is depicted more clearly by Fig. 1. Hence this paper provides a three-way classification and consequently three models, one for each cadre.

Since this model is based on the centrifugal approach, *i.e.*, there is a vanishing effect of the metropolis as the distance from the central pivot

increases, although this does not hold true for a longer distance. In this study, the maximum distance worked out is 20 miles which, of course, is not arbitrary, but based on the previous study, *i.e.*, worked out for the region under study.¹ This 20 miles radius region is divided into 18 circles, keeping a constant distance of one mile between each two circles, except in the case of the first circle, which has a radius of three miles and known as the centre of the city (Fig. 1). All the villages located between any two circles are the source of data observations.² The first circle, *i.e.*, the heart of the city is not included in the observations because it may result in a higher standard error due to the very high values of the variables under consideration.

SOURCE OF DATA

For the purpose of this study the data given by the Census of India, 1971 have been widely utilized. The data relating to nine economic categories, area, population by sex, and the literate and educated persons, etc., are given in District Census Hand books of Gujarat State at the village level. By using these data, the variables, *viz.*, ratio of non-primary workers to primary workers, population density, sex ratio and literacy level are defined as follows:

Ratio of Non-primary Workers to Primary Workers

In the Census of India, 1971 the total workers are classified into nine occupational categories as given below:

- (i) Cultivators
- (ii) Agricultural labourers
- (iii) Livestock, forestry, fishing, hunting and plantation, orchards and allied services
- (iv) Mining and quarrying
- (v) Manufacturing, processing, services and repairs including (a) household industry, (b) other than household industry
- (vi) Construction
- (vii) Trade and commerce
- (viii) Transport, storage and communication.
- (ix) Other services.

¹A pilot study within a radius of 100 miles is worked out which reveals that the influence of the Ahmedabad metropolis does not radiate beyond 20 miles from the pivot of metropolitan region. The study is entitled as "Regional Profile of Ahmedabad Rural—Urban Hinterland" and has been submitted as one of the research papers for the award of M.Phil. degree at Jawaharlal Nehru University, New Delhi in 1976.

²See definition of variables (source of data).

AHMEDABAD METROPOLITAN REGION

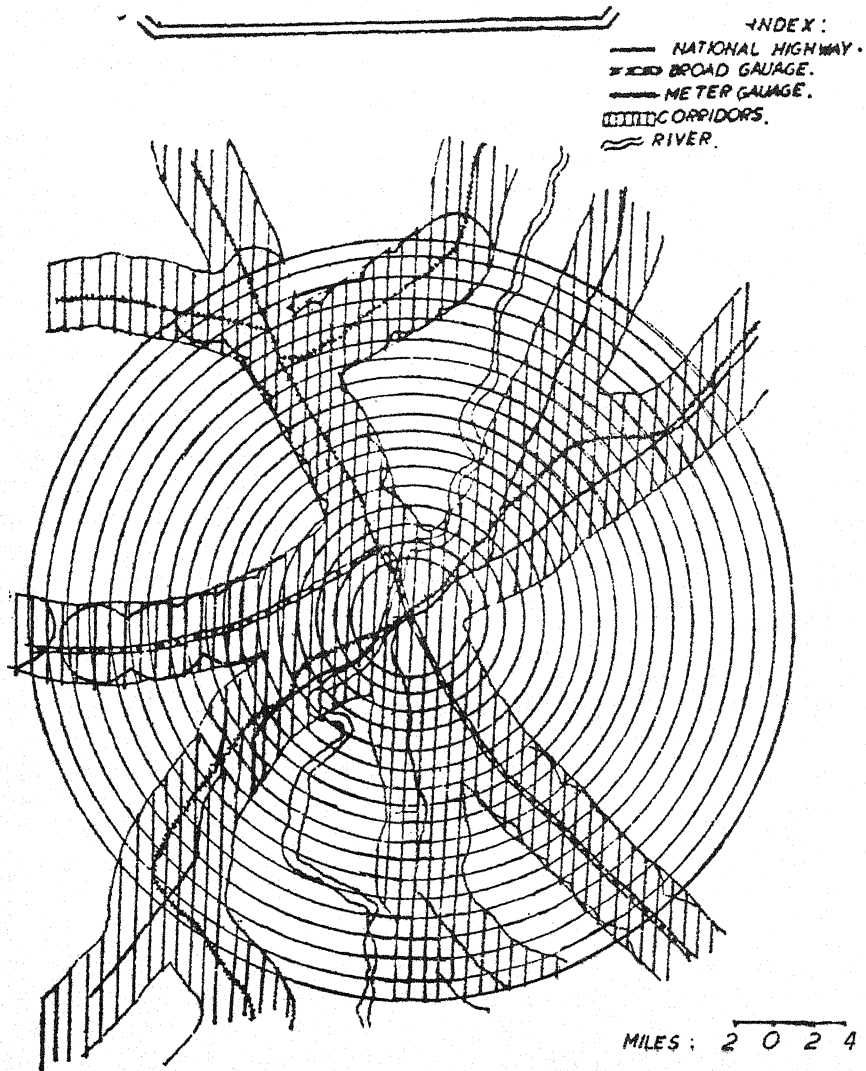


FIG 1

Out of these nine occupational categories, the first four are kept in one sector called the primary sector, the next two are known as secondary sector and the rest three come in the tertiary sector. Moreover, by adding secondary and tertiary sectors we can further make one more sector called non-primary sector. Now, if we take the ratio of non-primary to primary workers in percentage, it is one variable which has been used in this study

and represents all the economic activities.

Mathematically:

(Y_i) Ratio of non-primary workers to primary workers in percentages $= \frac{\text{Non-Primary workers}}{\text{Primary workers}} \times 100$

$$Y_i = \frac{\sum_{j=1}^n NPW_{ij}}{\sum_{j=1}^n PW_{ij}} \times 100 \quad i = 4, 5, \dots, 20$$

where, NPW is non-primary workers

PW is primary workers

i is the number of circle

j is the number of villages located between the circle i and i-1.

Population Density

Population density is obtained by dividing the total population by the area.

In mathematical notation:

$$(X_{1i}) \text{ Population density} = \frac{\sum_{j=1}^n P_{ij}}{\sum_{j=1}^n A_{ij}} \quad i=4, 5, \dots, 20$$

where, P is the population

A is the area in kilometers.

Sex Ratio

It is defined as number of females per thousand males computed for each circle, i.e.

$$(X_{2i}) \text{ Sex ratio} = \frac{\sum_{j=1}^n F_{ij}}{\sum_{j=1}^n M_{ij}} \times 1000 \quad i=4, \dots, 20$$

where, F stands for female population

M stands for male population

i and j have the same interpretation as mentioned above.

Literacy Level

The literacy level is defined as percentage ratio of literate and educated persons to total population in each circle, i.e.

$$(X_{ji}) \text{ Literacy level} = \frac{\sum_{j=1}^n \text{LEP}_{ij}}{\sum_{j=1}^n \text{TP}_{ij}} \times 100 \quad i=4, \dots, 20$$

where, LEP stands for literate and educated population
 TP stands for total population
 i and j have the same meaning.

Dummy Variable

Dummy variable is a binary variable which has a value equal to 1, in case there is presence of other town in any circle, otherwise zero. This has been done since in some circles there are other urban centres (towns) having their own effect upon the nearby villages.

HYPOTHESIS

If all the estimated β coefficients are insignificant, the construction of this model is not worthwhile, and the distance from the city and other factors, viz., level of industrialization and social and economic infrastructure affect the dependent (Y) variable.

If the estimated β coefficients are significant than other explanatory variables to determine the endogenous variable (Y) along with the distance from the centre and other socio-economic factors.

If the estimated β coefficients are significant we have the following explanations:

- (a) Ratio of non-primary workers to primary workers is an increasing function of population density. That means higher population density leads to higher work participation in non-primary activities. Mathematically:

$$Y = f(X_1, Z) \quad \text{and} \quad \frac{\partial Y}{\partial X_1} = \beta_1 > 0$$

where, X_1 is population density and Z is other variable.

- (b) The ratio of non-primary workers to primary workers is a decreasing function of sex ratio. It is expected because in Indian situation comparatively more males are engaged in non-primary activities and due to male selected immigration to urban centres for getting job, a lower sex ratio is observed

$$Y = f(X_2, Z) \quad \text{and} \quad \frac{\partial Y}{\partial X_2} = \beta_2 < 0$$

where, X_2 is sex ratio and Z stands for other variable.

- (c) The ratio of non-primary workers to primary workers is increasing function of literacy rate. As it is envisaged that due to the immigration to urban centres, (generally migrants are literate persons) literacy is higher in comparison to other areas

$$Y = f(X_3, Z) \quad \text{and} \quad \frac{\partial Y}{\partial X_3} = \beta_3 > 0$$

where, X_3 is level of literacy and Z are other variables.

- (d) If X_4 , i.e., dummy variable equals to one higher the value of endogenous variable is expected. That means that Y is expected to be an increasing function of X_4 (positive value of β coefficient for X_4).

THE MODEL AND ITS NUMERICAL RESULTS

This analysis is based on the general linear regression model. Three sets of the multiple regression equations have been computed for finding the results. The first multiple regression is related to aggregate analysis and is labelled as model I. Similarly, the second and third equations are related with the within-corridor analysis and outside-corridor analysis respectively and are labelled as model II and III. This model explains the effect of population density, sex ratio and the level of literacy on the ratio of non-primary workers to primary workers. The regression equation in mathematical relations is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + u_i$$

The coefficients and the parameters of u distribution are unknown and our problem is to obtain the estimates of these unknown.

The results of estimation for the three models calculated with the help of Polish Computer "ODRA 1305" are following:

Model I

$$Y = 5024.7504 + 0.0885X_1 - 5.3054X_2 - 4.4504X_3 + 34.7402X_4$$

(990.1200)	(0.1497)	(1.0119)	(5.0790)	(39.3322)
t ratios 5.0749	0.5911	5.2429	0.8762	0.8838

$$R^2 = 0.9308, \quad DW = 1.7409, \quad S = 63.9083$$

Model II

$$Y = 8522.4906 - 0.0520X_1 - 9.2847X_2 - 1.3745X_3 + 127.4072X_4$$

(2160.4618)	(0.3246)	(2.2704)	(9.2937)	(77.7109)
t ratios 3.9447	0.1602	4.0894	0.1479	1.6395

$$R^2 = 0.9000, \quad DW = 1.4842, \quad S = 118.8103$$

Model III

$$Y = -76.6678 + 0.9348X_1 - 0.2401X_2 + 2.9510X_3 + 70.0674X_4$$

$$(439.6889) \quad (0.1350) \quad (0.4592) \quad (2.2343) \quad (36.5707)$$

$$t \text{ ratios } 0.1744 \quad 6.9236 \quad 0.5228 \quad 1.3208 \quad 1.9159$$

$$R^2 = 0.9446, \quad DW = 2.1292, \quad S = 32.6651$$

where, R^2 denotes the coefficient of determination

DW denotes the Durbin-Watson statistics

S denotes the estimate of standard deviation of error terms

t is the test of significance (figures in the brackets)

Although in model I, all the variables possess expected signs except the literacy (X_3), their 't' ratios do not show the high significance of variables, except variable X_2 (sex ratio). The value of R^2 is 0.9308, which indicates that about 93 per cent of the variation in 'Y' is explained by this model. But this is due to the high degree of multicollinearity between the explanatory variables. The variable X_3 is found to be highly correlated with X_1 and X_2 and as such a further attempt has also been made to fit the model by excluding the variable X_3 from model I.

In model II again only one variable, *i.e.*, sex ratio (X_2) has the expected sign as well as the significant 't' ratio. Other coefficients are insignificant. The value of R^2 is 9.90 which is very high and it may be due to the high degree of multicollinearity between the variable X_3 , X_2 and X_1 . Here again variable X_3 is highly correlated with the X_2 and X_1 and therefore, yet another attempt is made, where the model is computed by excluding the variable X_3 from the equation.

Though the first two models are seriously affected by the problem of multicollinearity, the third model provides us with comparatively good results. All the estimated β coefficients possess the expected signs, but only two of them, *viz.*, population density (X_1) and dummy variable (X_4) are significant (see 't' statistics). The value of R^2 is 0.9446, which means that about 94 per cent of the variation in the dependent variable are explained by the explanatory variables. Although, in this case, variable X_3 (*i.e.*, level of literacy) is not correlated with other explanatory variables as in the first two models, variable X_2 (sex ratio) is found to be correlated with the X_1 variable. Consequently, for getting good results, in the second attempt this variable (X_2) too is excluded from the model.

The Durbin-Watson test has also been applied to test the hypothesis of autocorrelation. It is observed that model I and III are not affected by the problem of autocorrelation, while in the case of second model, the test is proved inconclusive.

The estimate of standard deviation of error term (S) is calculated and it is observed that it is lowest in the case of model III and highest in the case of model II. This indicates that out of the above three models, model III is more reliable than the other two. For the sake of removing the problem of multicollinearity, the trio models are computed once again.

and results obtained are given below:

Model I

$$Y = 4061.9269 + 0.1477X_1 - 4.4494X_2 + 44.5558X_4$$

(1102.4206) (0.1670) (1.1602) (35.1175)

t ratios 3.6845 0.8844 3.8350 1.2659

$R^2 = 0.930274$ DW = 1.63092654 S = 61.6301

Model II

$$Y = 8150.3247 - 0.0208X_1 - 8.9440X_2 + 127.4117X_4$$

(1987.7436) (0.2835) (2.1129) (9.1992)

t ratios 4.1003 0.0735 4.2329 1.8412

$R^2 = 0.8995$, DW = 1.4277, S = 114.4823

Model III

$$Y = -303.6535 + 0.9938X_1 + 2.6711X_3 + 67.7169X_4$$

(67.6178) (0.0719) (2.1080) (35.2644)

t ratios 4.4907 13.8027 1.2675 1.9203

$R^2 = 0.9434$, DW = 2.1125, S = 31.7390

It is evident from model I, that all the signs of the coefficients are as expected with the exception of variable X_2 (*i.e.*, sex ratio), no other variable possess the significant 't' ratio. The value of R^2 and S are approximately similar to that we could obtain in our first attempt. There is no doubt that the 't' ratio for the dummy variable has raised from 0.88 to 1.27. But even this does not throw much light on the effectiveness of this variable and hence no significant improvement can be observed in the second attempt too in respect of the model I.

In the case of model II, a comparatively satisfactory improvement is evident in the second attempt. Although the value of R^2 is approximately the same, the 't' statistic for the dummy variable becomes more significant. In this case, with the exception of variable X_1 (*i.e.*, population density) all other variables possess the expected signs as well as the significant 't' ratio. In other words, if we exclude the literacy variable from model II, we may find that the sex ratio and dummy variable affect the nature of work participation, while population density does not play any important role.

As mentioned earlier in the third model, we excluded the variable X_2 due to the problem of multicollinearity. Here no further improvement is observed and in fact the 't' value for the variable X_3 (literacy) becomes a little less, although at the same time we find a significant intercept, which was insignificant in the previous situation. The other statistics, *viz.*, R^2 , DW, and S are almost the same.

ARE OUR EXPECTATIONS CONFIRMED?

It is evident from the models and their test of significance that the coefficient for the variables like population density and literacy are not significant. Therefore, it may be concluded that these variables do not play any significant role in determining the nature of work participation in economic activities. But this conclusion is quite illusive, because it has also been confirmed from the correlation matrix that dependent variable Y is highly correlated with the variable X_1 and X_3 . It seems that these coefficients are not significant due to the presence of multicollinearity. Hence although in the models discussed above, the coefficients are not significant even though they have certain impact upon the dependent variable Y.

The variable sex ratio possess a significant role and determines the endogenous variable for the corridor region as well as the region as a whole, but no significant impact is observed at the outside-corridor region. Dummy variable (*i.e.*, the presence of the other urban area) affects the population living in its vicinity and consequently a significant effect on dependent variable is observed. Although the value of dummy variable is only one, in case of the presence of any urban region (town) which is a bit lower, even though it has a significant meaning in trio model. This shows that there are also other important variables like industrialization, level of the social and economic infrastructure, government policies about the regional development, availability of other resources, etc., which determine the nature of work participation in economic activities.

This analysis draws attention towards the fact that there is a tendency of immigration, wherever the work participation is higher in non-primary sectors and in such areas lower sex ratio is also observed. In other words, the sex ratio, which is affected by migration too, affects the nature of work participation significantly. Moreover, this is seen highest in the within-corridor regions and least in the outside-corridor region. Similarly, the dummy variable is also most effective in within-corridor regions because generally towns are located inside the corridors.

LIMITATION OF THE MODEL

Since this study is based on data provided by the Census of India, 1971, it deals with merely one point of time and highlights the existing relations only and hence tends to be a little static in nature. However, it can be made dynamic by using the data of three or four earlier censuses and then it would more useful for the purposes of planning.

The variable X_3 seems to be misleading, because the denominator (total population) includes all the children below the age of 4 years also and they are naturally illiterates. Hence there is an inconsistency between numerator and denominator. By excluding population below the age of 4 years

from the denominator, this error could have been rectified, but no data according to age distribution of population is available at village level in 1971 census and as such it has not been possible to do so. In this model we have introduced only four explanatory variables, namely, population density, sex ratio, level of literacy and dummy variables, although two other variables, *i.e.*, dependency ratio and migration should also have been included for better results. But the non-availability of data, with respect to age distribution of population at village level, as also on migration made it impossible to include these variables into the analysis.

USEFULNESS OF THE MODEL

As pointed out earlier, this model can be converted into a dynamic one which would be useful for planning purposes. For effecting a switchover from the static to dynamic relations we require time series data along with the cross section data. For this purpose we can include the data given by the censuses conducted earlier. As an illustration to this point, let us assume that the data starting from the census 1951 may be taken into account. Hence we may construct the same model for each census beginning from 1951 and we can have the three equations of each model and our object will be to forecast the fourth set of equations which will be related to 1981 census. Moreover, after the completion of 1981 census, one more equation can also be evolved by using the data provided by the census and it can be compared with the equation forecasted. It will definitely throw some light on the reliability of the forecasted coefficients.

In the mathematical relations this model can be explained as follows:

$$Y^{51} = \beta_0^{51} + \beta_1^{51}X_1 + \beta_2^{51}X_2 + \beta_3^{51}X_3 + \beta_4^{51}X_4 + \mu^{51} \quad \dots(1)$$

$$Y^{61} = \beta_0^{61} + \beta_1^{61}X_1 + \beta_2^{61}X_2 + \beta_3^{61}X_3 + \beta_4^{61}X_4 + \mu^{61} \quad \dots(2)$$

$$Y^{71} = \beta_0^{71} + \beta_1^{71}X_1 + \beta_2^{71}X_2 + \beta_3^{71}X_3 + \beta_4^{71}X_4 + \mu^{71} \quad \dots(3)$$

$$Y^{81} = \beta_0^{81} + \beta_1^{81}X_1 + \beta_2^{81}X_2 + \beta_3^{81}X_3 + \beta_4^{81}X_4 + \mu^{81} \quad \dots(4)$$

The β coefficients of the fourth equation can be forecasted by utilizing the information about the coefficients given by equations first to third. Yet another set of equation (5) can also be obtained after the completion of the census of 1981, and the estimated

$$Y^{81*} = \beta_0^{81*} + \beta_1^{81*}X_1 + \beta_2^{81*}X_2 + \beta_3^{81*}X_3 + \beta_4^{81*}X_4 + \mu^{81*} \quad \dots(5)$$

coefficients are compared by the equation (4), which in turn will provide the reliability of the forecasts. But for the time being, in the absence of 1981 census data, one can use the information provided by equation fourth, for the purpose of planning.

Similarly, another set of equations for the year 1991 can also be forecasted.

ted, but since the period will be longer, the reliability of the forecasts will also be lesser. Here special attention must be drawn to the fact that there are some changes which had taken place with the pace of time. The results obtained will not be reliable in case we ignore the same. For example, changes in the boundaries of the region and census definitions for the variables taken into consideration, require some adjustments at the time of formulating the equations. Similarly, the map used for the 1971 census is not applicable to the previous censuses data due to changes in village boundaries or the emergence of old villages into new one and the construction of new railway line, road, etc. Therefore, for estimating the equations related to the previous decades, it is absolutely essential to consider and incorporate these changes into analysis.



*Where Do We Go From Here? The Problems of Calcutta Metropolitan Region**

ASOK MITRA

There is no wiser saying in the writing of John Stuart Mill, the classical economist of the last generation, than his reminder that, if we would improve the condition of the people, the improvement must be on a scale that they can observe and realise, not frittered away piecemeal as are so many municipal improvements. In these cases the changes pass unnoticed and are neglected. In the former case they are appreciated and the people rise to the occasion.

PATRICK GEDDES
*A Report on Town Planning in
Balarampur, 1917.*

I

IN SOME ways, Calcutta is a very special or unique city: a primate city situated at the edge of an impoverished hinterland, sucking in whatever the latter produces, much of that, too, for export at severely competitive prices. In other ways, it stands as the archetype of a primate city in the under-developed world, what most large cities in Asia, Africa and certain parts of Latin America, may degenerate to, unless vigorously guarded against. For, all primate cities in the underdeveloped world are, at bottom, large reservoirs of the rural poor turned urban by migration, whose level of consumption and nutrition in the city is little higher than that of the poor in rural areas, and whose main field of employment is still in the unskilled poverty induced tertiary sector. Calcutta, thus, is the uneasy conscience of all primate cities in the underdeveloped world: one faltering step, and

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they are there tomorrow where Calcutta is today. Despite its vitality and tremendous activity, its Baudelairean beauty as a flower of evil, its fierce assertion of life in the general odour of decay, its peculiarly satisfying personality and cultural ambience which grows on the visitor as he stays on, Calcutta yet serves as a sombre warning on urbanization throughout the underdeveloped world.

Historically, Calcutta, a colonial metropolis, has been an impoverishing city rather than an enriching one. The role of Calcutta, as is true of most primate cities in all the colonial world, has been the role of impoverishing the countryside and of fattening itself at the latter's expense. In the seventeenth and eighteenth centuries, the East India Company, and in the nineteenth, its successor, the British Government, exploited the whole of eastern India with Calcutta as its suction base. For example, tea plantations of Assam, being almost entirely British owned, imported every bit of machinery, spares and replacements and servicing facilities from the United Kingdom. Even pruning knives and barbed wire for fencing the plantations were imported from Britain up to 1940. Servicing or repairing in the Assam plantations used to be done by calling up technicians and engineers from Calcutta. As a result, not even a small engineering or servicing plant sprang up in any town on the Brahmaputra valley up to 1947. Similarly, much more jute was processed and manufactured into finished goods in Dundee and Aberdeen than in the factories on the river Hooghly. The cultivation of jute was entirely dependent on the British Stock Market. Indigo cultivation had laid vast areas of Bihar and North Bengal exhausted and impoverished. The discriminating leases in the coal fields of Bengal and Bihar had also told heavily on Calcutta's business climate. The relationship of viability between the agricultural hinterland of Bengal and the industrial and commercial field of Calcutta was thus destroyed to which the permanent settlement had possibly contributed with its neglect on agricultural investment. Agriculture failed to yield the surplus which alone could have maintained the healthy growth of metropolitan Calcutta. Even the district towns began to wither from 1930 onwards and it is curious that the rate of growth of population of many West Bengal towns today is appreciably less than the rate of growth of population of West Bengal as a whole, which means that the district and subdivisional towns of West Bengal are failing to attract their respective rural populations even at minimum rates which in all conscience they should. So, while one thinks of the problems of Calcutta, the more fundamental problem is one of resuscitating rural West Bengal, Bihar, Orissa and Assam which alone can provide the right viability for the city.

II

It is important briefly to mention two outstanding facts, liable to be

ignored even by those who know, that have gone into Calcutta's uniqueness, although even here what has happened to Calcutta might overtake any other city in the wide underdeveloped world. Upto 1940, that is, the beginning of the Second World War, Calcutta was perhaps one of the most satisfying cities in the East, not excluding Singapore, Hong Kong and Bombay. This writer would attribute the reason for it to the fact of Calcutta's industrial growth and diversification, keeping pace with its population growth inasmuch as the level of unemployment up to 1940 was low, and contained well within 7 per cent of its adult male population. Calcutta's efficient port and transport facilities matched the city's industrial activity, which in its turn was well sustained by its abundance of industrial water and power. The city's stock of skilled human resource and entrepreneurship was the richest not only of all cities in India but almost the entire East.

The Second World War converted Calcutta into a major forward base and quickened its industrial enterprise attracting an unprecedentedly large volume of unskilled and semiskilled labour to man feverish and mushrooming industrial enterprise addressed to war supplies. Housing, water supply, sanitation, sewerage and general municipal infrastructure, including the metropolitan transportation and communication services, were strained beyond limits, and very palpably failed to keep up with the rate of population growth caused by the new migration, packed into a brief space of three years (1941-44). Civic amenities began to fall apart. The gap between population and industrial growth accelerated with the influx of refugees from East Pakistan, after the partition in August 1947. By 1951, when the census was taken, about 1.5 million refugees from East Pakistan had settled in the Calcutta industrial region (roughly 150 square miles). Calcutta and Howrah cities alone accounted for over 900,000 of them. The new population influx from East Pakistan which continued in the decade of the sixties and into the seventies, culminated in the Bangladesh avalanche of 1971, caught Calcutta's industrial pace totally unawares, widened the gap between the metropolis's population growth and industrial growth, and consolidated a new type of the urban poor—a bodily transfer of vast masses of the rural poor to the heart of a metropolis without the necessary physical, mental or skill orientations. The urban poor reinforced by the poor steadily pouring in from other States of India had little means of subsistence through other means or enterprise except by rapidly filling the ranks of the poverty induced tertiary sector, by claiming the services that are created by none other than the physical growth of population itself. Ever since 1950, industrial growth in the Calcutta metropolitan region has failed to keep up with its population growth. In fact, except for a short spell in 1961-66 the gap between population growth and industrial growth has steadily and rapidly widened. Owing to the lack of a desirable rate of industrial growth and the languishing of the port of

Calcutta, the city's infrastructure, too, has grievously and continuously suffered for lack of sustenance. The problem of Calcutta is essentially the problem of population growth and industrial growth having parted their ways suddenly and sharply in all too brief a space of time and gone their different courses ever since, in almost inverse relationship to each other.

The second factor which added fuel to the fire was the fact that between 1947—that is, the aftermath of the Second World War—and 1952, a series of wage tribunal awards rent asunder the solidarity of the blue and white collar workers in Calcutta, that had obtained so far. As a consequence of these awards, a hiatus appeared and began to grow between the wages of the blue collar and the white collar workers. For the first time the blue collar worker who traditionally hailed from a lower cultural and educational level, began to earn more than the white collar worker, normally recruited from a higher cultural and educational level. The white collar community, again, was largely non-migrant. This led to rather sad consequences in attitudes towards productivity and demands for municipal amenities and social benefits. The blue collar worker, being in the main immigrant, had less stake in the city and, being more intent on sending savings home, was less intent on improving his surroundings. Bereft of the support of his blue collar colleague, the low income white collar worker's voice asking for municipal improvements was muted and weakened. The latter became less interested, too, in parting with his earnings by way of rates that would benefit the blue collar worker more than him.

It is often argued as though the leeway that Calcutta has lost in the last 25 years can be easily recovered once Calcuttans have made up their minds to do so. The sad fact is that it will prove very difficult for Calcutta to retrieve her primacy in the industrial map of India. A large number of industries moved away from Calcutta to other cities of India between 1958 and 1973. Chief to move away to new pastures were entrepreneurship and head offices of important corporate and financial bodies. The equalization of prices of the most important raw and processed materials, like coal and steel, robbed Calcutta of the locational advantage that she had enjoyed up to the middle of the century. Secondly, investment and entrepreneurial skill have now dispersed all over India and it would be wishful to think that they could be readily restored to Calcutta again. Thirdly, the claims of the other regions of India for balanced industrial growth will be difficult to ignore from now on, in spite of the obvious natural resource endowments of West Bengal. All things taken together, it will be unrealistic to imagine that West Bengal and Calcutta will be able to replace all her obsolescent plants, import masses of new technology, and recover the kind of industrial primacy that she enjoyed in the past or manage the level of industrial investment that could give her this kind of primacy in the foreseeable future.

III

At a recent informal discussion, Sri S.K. Roy, Director of Planning with the Calcutta Metropolitan Development Authority, made a significant observation that the questions we are entitled to ask today we would have been scarcely competent to ask had our level of expenditure been substantially lower than Rs. 110 crores in the space of the last three years. It is this level of investment at an average of Rs. 35 crores per year that lends validity to the questions that now legitimately arise.

Before one embarks upon questions, one feels one should plainly state that an investment of Rs. 110 crores in three years in a city which caters to about 8 million people is not something to write home about, particularly when it has been made after more than three decades of gross neglect. Since 1940, Calcutta City has hardly seen any maintenance investment, not to speak of renewal, and still less of improvement or augmentation. It received no attention even when it functioned for more than five years as the headquarters of one of the major theatres of the greatest war in living memory, no succour against the ravages of famine, internecine strife, sudden and grievous dissection of ethnic and linguistic territory, the wounds of which never quite healed. Calcutta suffered from complete loss of one of the richest hinterlands on earth, recurring traumatic experiences of massive migrations climaxing in an unprecedented avalanche of 10 million migrants in the space of four months and from the effects of a major theatre of war which disrupted all semblance of normal existence, followed by a crippling void of human and physical exhaustion. Throughout more than three decades and a half, Calcutta was chewed dry until people came to realise that it must be moistened a little to get on with the chewing again. A sum of 110 or 120 crores of rupees (a total of Rs. 127.38 crores in the Fourth Five Year Plan inclusive of administration overheads and debt service charges and stock of scarce materials) is very small compared to what has been continuously invested on Delhi since 1940 or even on Bombay since 1947. Indeed, it is perfectly valid to argue that perhaps nothing less than about a thousand crores of rupees in the space of ten years will be enough to render the Calcutta Metropolitan Region reasonably viable again.

But for various reasons, the present seems to be an appropriate moment to ask a number of questions like *whither, why and how and with what kind of overview.*

IV

Let us begin by taking a quick stock of the positive fruits of the three years' investments in Calcutta. Ever since planning began in India, private investment has not preceded but followed, closely, but with a slight time

lag, in the wake of public investment in whichever sector one likes to think of, particularly in industry, power, construction, trade and communication. Private investment has followed the cycles of public investment even territorially. This applies with particular relevance to the Calcutta and Asansol-Durgapur Regions. Private industrial investment in these two regions handsomely responded to State investment between 1954 and 1962, and although in Asansol-Durgapur private investment did not measure up on all fours with public investment, it did measure up in Calcutta, where Government investment went mainly on infrastructure like augmentation of power, servicing and port facilities. As early as 1957, following Dr. B.C. Roy's decision on the Bandel Power Station, the Calcutta Electric Supply Corporation wanted to put in another 100 MW or so in Garden Reach, which in hindsight seems an excellent idea wasted, but new industrial units in Taratolla, Budge, Triveni and Howrah were the private sector's response to the public sector's effort. In fact, the Taratolla—Budge Budge region, with its sophisticated capital and skill intensive units mushrooming around 1958, held the promise for Calcutta that Thana later fulfilled for Bombay.

In the last three years the private sector has found a new way of responding to public investment in the Calcutta Region or, rather, received a channel of investment which gave Calcutta a crop of new buildings and localities as long ago as 1927-39. Between 1945 and 1966 the Rent Control Act had a crippling effect on Calcutta's building trade. Real estate and the apartment construction industry came into its own for a brief period in 1967-69 to go dormant again under the new political tide, when rents crashed and construction for renting or sale became unprofitable. The new money pumped into the CMDA in a big way in 1971-72 accelerated a movement which had appeared first as a sign in a small way in 1954-56 but as a definite trend in 1967: that of highrise, highdensity apartments meant mostly for the high income groups. Curiously enough, in all these three periods, the fashion was set by the public sector to be imitated by the private sector. In 1952-54, the State Government first built Calcutta's tallest building, the new Secretariat. The Bengal Chamber followed suit with its highrise apartments in Alipore. The trend setter in 1967 was the Central Government and Air India and in 1971-72 the ice was again broken by the Central Government. This earnest of the Government's intentions in the outlay on CMDA and its own housing policy led to a fresh spate of private capital in real estate for which the groundwork had been prepared in 1967-69. This activity found an outlet for pent-up capital which had stopped being ploughed in any quantity in industry around Calcutta since 1962-63.

If one get up on top of a highrise building in the Theatre Road area, one could count at least 50 silhouettes of highrise, highdensity apartments either completed or nearing completion. One could also spot a few more

looming up. At a conservative estimate the sum of these new structures would amount to little short of Rs. 75 crores, not counting the black money that goes to the internal embellishment of these flats through the use of expensive marble fittings and superfluous ornaments and decorations that appeal to the new rich.

The occupants of these highrise flatted growth have contributed to the professional, entrepreneurial, managerial, scientific and technical manpower resources of the city. Belonging to a much higher consumption level than the bulk of the city's population they have also stimulated a perceptible amount of local industry, wholesale and retail trade, and a wide range of skilled and unskilled services. But it has also to be remembered that a considerable number of the residents of these new apartments are immigrants into Calcutta and have added to its population and made a further dent into its municipal services.

It can be argued that these growths have been almost a direct fallout of the CMDA investment programme along with a return of confidence in the city's future. Along with this real estate spurt has occurred a resuscitation of all the industries and trades concerned with the building activity, which accounts for a certain briskness in medium and small industries in Calcutta and a certain stimulation of employment not only of domiciles but also of immigrants. Large numbers of immigrant construction workers,—the majority of them being unskilled but accustomed to heavy manual work—and of workers connected particularly with road transport, transshipment, loading and unloading have found their refuge in the city. This has stimulated Calcutta's transportation fleet—both public and private—with its attendant side effects. Above all, it has stimulated a very large number of tertiary trading and service jobs mainly to service the large population of immigrant construction and transport workers, from eating-booths to personal services like barbering and a vast array of pavement shops vending an astonishing range of perishable to durable consumer goods, all catering primarily to the pavement dweller and the low income resident family. For, the vast majority of the new immigrant population engaged in the real estate and construction industry in Calcutta have been condemned to pavement dwelling and their needs are mostly satisfied on the selfsame pavement. This has happened not to Calcutta alone but also to Kanpur, Delhi and Bombay.

V

If the process of redensification through highrise construction for the affluent goes on space, and if major improvements are made in the circulation system of the city by multiplying the inlets and outlets and improving the velocity and ease of transportation, there is bound to be a rapid thinning of Calcutta proper, resulting from steady squeezing out the

lower and lower-middle income groups. Calcutta will grow into a city with fewer shades of social and economic classes, and will consist mainly of the rich and upper income groups on the one end and of the very low income service and working class groups dwelling in the bustees on the other. For, it is becoming increasingly clear that Calcutta's taxes and rates will have to keep on multiplying with new imposts on many permanent and casual activities thrown in, to pay for the maintenance and renewal of the newly created assets. That way there is bound to be a dramatic reduction in the population of long-time residents.

Something in this happened in the decade of the fifties. The Census of 1951 was taken four years after the partition and counted 686,000 persons in Calcutta proper as born in Pakistan, mainly in Bangladesh. In 1961, this figure dwindled to 528,000. Similarly, Howrah District in 1951 counted 94,000 persons born in Pakistan—Bangladesh, and only 80,000 in 1961. On the other hand, the urban areas of 24-Parganas showed an increase of persons born in Pakistan-Bangladesh from 366,000 in 1951 to 490,000 in 1961, while rural 24-Parganas showed an increase from 255,000 in 1951 to 297,000 in 1961. Hooghly, adjoining Howrah, showed an increase from 72,000 in 1951 to 131,000 in 1961.

An interesting process started in the decade 1951-1961 which continued in the next and probably continues to this date. There is plenty of evidence that the first rush of immigrants from Bangladesh during 1947-52 concentrated for obvious reasons in Calcutta and Howrah cities proper, but part of it felt compelled to leave it for the peripheral and non-municipal areas to preserve some semblance of their former life style. They either squatted on or bought small plots of land all around Calcutta and built small cottages or substandard brick buildings for themselves with tile or tin for roofs. This kind of growth in the urban and rural areas around Calcutta, Howrah city and the towns of Hooghly and Nadia Districts is there for all to see. It is particularly impressive from a low-flying plane. Within their small plots, acquired by purchase or trespass, the families retain a semblance of privacy, make their own arrangements for water supply, sewerage and sewage and, on top, grew considerable quantities of vegetables and small fish which feed the markets and pavement shops. Of all the cities of India, Calcutta retains its pride of place for vegetables and small fish, thanks mainly to the enterprise of people who were too poor to go on living in Calcutta. These people have managed to live estimable lives in their own way, educating their children in professions and skills, engaged in self-respecting livelihoods and discharging social responsibilities. Their way of life, though much constricted by lack of resources, is perhaps in many ways worth more socially than the kind of socially wasteful life that many people, who may have displaced them, live in affluent flatted growths in Calcutta proper. The country has to choose the type of life

it prefers for the majority of its citizens instead of leaving it entirely to *laissez-faire*.

VI

There has been a noticeable increase in the human density of Calcutta proper ever since the CMDA began to spend large sums of money at the end of 1971. Part of the sense of overcrowding, of course, has been contributed by the dug-up roads, the stockpiling of construction material at prominent open spaces and the working of large machinery. But it will hardly be disputed that contractors, skilled and unskilled construction workers and even groups of beneficiaries being largely immigrant, the population of Calcutta has swelled, more rapidly, than normally, since 1971. The rumour of job availability attracts more population than can actually find jobs. This applies particularly to the accretions to the pavement population and the preternatural increase in the number and range of services that have mushroomed on them threatening to choke even pedestrian circulation. Needless to say, this has spelt great strain on the augmented filtered water supply, conservancy, sewerage and sewage of the city.

The more development is concentrated in Calcutta proper without a more substantial fraction of it being directed to the surrounding region and; if one may venture to suggest, the more starved the district and sub-divisional towns are, the more overwhelmed will Calcutta proper be with Bengali and non-Bengali immigrants. Ever since 1974, the district and sub-divisional towns in West Bengal have been starved and neglected as they have never been in other States of India. They are now failing to stem the tide of immigrants to the Calcutta Region for lack of the meanest amenities and for an excess of filth and congestion. It will come as a shock to many that the rate of population growth in the towns and cities of West Bengal outside the Calcutta Metropolitan Region, between 1951 and 1971, has trailed behind the mean rate of population growth in West Bengal as a whole. The community development movement in the rural areas dried up around 1960. Unless these counter magnets are revived through some strenuous self-help activity, with assistance pumped into them from the State Government, the load on Calcutta will increase unbearably. The fact is that the CMDA's efforts in Calcutta since 1971 has accentuated the population pressure on the city very demonstrably; by threatening to choke up vehicular and pedestrian circulation not only on the smaller streets and lanes but along the main arteries. It is only in very small isolated neighbourhoods where the population is entirely homogeneous and the areas retain some semblance of privacy that the lanes and narrow streets are still comparatively free.

Let us consider what is threatening to be in store for Calcutta when certain major projects swing into action. Conceivably there are going to

be 40 to 50 more of large, highdensity, highrise blocks, no ban being contemplated on them as yet. In the next place, three major works will start: the underground north-south mass transit system; the second Howrah Bridge, the flyover on Brabourne Road and possibly one or more flyovers around Sealdah. This will result not only in displacement of population but their reconcentration in less space, because none of the displaced population will be persuaded to leave Calcutta proper. On top, these works will demand, at a conservative estimate, a minimum of 50,000 persons—contractors, technicians, administrative personnel, skilled and unskilled workers, transport fleets, with their servicing facilities, and a minimum of another five to ten thousand persons to provide services, on Calcutta's pavements, for this contingent. What is more, the majority of them are likely to be short-term immigrants from other States of India, who will prefer to live on the pavement, on minimum investment or commitment, for the duration, which means that they will enjoy whatever meagre services Calcutta Corporation will have to offer, without being compelled to pay for any of them or without even any psychological or civic stake for keeping Calcutta clean and habitable. This is a matter which has not yet been given thought to. The thought of Calcutta adding more than half a lakh of adults to its pavement population in the brief space of a year or so, with its open spaces still further contracting under pressure of construction, can be rather distressing, particularly when there are no positive plans ready for cushioning the impact.

VII

Around 1969-70, two experts invited by the Ford Foundation to work for the Calcutta Metropolitan Planning Organization on the prospects of low-cost housing in Calcutta Metropolitan Area produced a Report that goes by their names—Kingsley and Kristof. Unfortunately the Report failed to receive the attention it deserved either in Calcutta or from the Central Government. Kingsley and Kristof arrived at the conclusion that the land values and building costs being what they were, there was no hope of families in the income bracket of about Rs. 300 per month ever acquiring a residence of about 260 square feet for themselves in Calcutta city. The semi-urban and rural spaces in the Calcutta Metropolitan Region might still provide the propitious circumstances, provided costs were reduced by operations of scale and with standardized materials and specifications.

If these remarks applied to conditions in Calcutta, they would apply equally to corresponding income groups with corresponding levels of consumption in other big cities of India and this brings one to certain fundamental considerations on what kind of urbanization deserves to be articulated and assisted in India and how this articulation can be stimulated in

the context of the Calcutta Metropolitan Region.

It is now common knowledge that the degree of industrialization and white collar services that one associates with urbanization in the Western world does not exist in the majority of the developing countries in Latin America, Africa and Asia. It certainly does not exist even in the most citylike city of India, Bombay. In most urban areas of the western world the level of consumption of the lowest income deciles of the population is decidedly above that of the corresponding groups of their rural populations, whereas Dandekar and Rath have demonstrated and their contention remains by and large undisputed, that the level of nutrition of the lowest income deciles of India's urban population is often below that of similar groups among her rural populations. This yields the conclusion that a substantial proportion of India's so-called urban population has very little to do with the kind of blue and white collar jobs one associates with urban areas of the West, but mainly subsists: (i) on very low paid menial jobs, which often fetch incomes as low as those of landless agricultural labourers in depressed areas, or (ii) on extremely low level domestic service, trading and other pursuits which in the west used to be known as 'breaking the book'—e.g., selling cigarettes or biris by the stick and not by the pack or other articles of very low income consumption, in short, in services that are generated merely by the growth in the numbers of a poor population and not by economic investment.

For a long time to come or at least in the foreseeable future, industrial investment in India is unlikely to reach the level that will support all but the lowest income decile or two of India's population in the appropriate blue and white collar jobs that one associates with an industrialized country. Places like the Calcutta or the Bombay Metropolitan Region will be lucky if the second or third lowest income deciles of their population are enabled to have a consumption level that will give them reasonable nutrition and shelter against exposure. In other words, India's urban population should have reasonably arrived if, in the foreseeable future, all but its lowest income decile or so is enabled to have a minimum consumption of Rs. 350 to 400 per month, at 1968-69 prices, for a family of five, provided, of course, such a family is not made to pay fully for all the civic services and amenities that a city like Calcutta is supposed to maintain. This, itself, will put to severe test India's ability to go ahead with adequate levels of investment for her industrialization programme, which is far from being reached.

In such a situation, even if India went full steam with her programme for reducing income disparities and drastically reducing the individual ceilings of urban property, the level of investment that is being currently undertaken by the CMDA for Calcutta or the Bombay Metropolitan Authority for the twin city project of Bombay or the Delhi Development Authority for Delhi, is far above what the vast bulk of their resident

populations can bear and pay back for or maintain with reasonable ease in the future. In short, the developments under way under the auspices of the CMDA are pricing themselves out of the competence of the Calcutta neither to maintain, augment or replace them with his own resources. At this rate all the big cities in India will have to be on perpetual charity or subsidy. The improvements on hand are on scales much larger than the traffic can bear, for the present economic structure of her population and the system of municipal rates and taxes cannot ever raise more than a small fraction of the money required to pay for them. If Calcutta is to sustain the improvements it has embarked upon, it will shortly have to squeeze out a substantial proportion of its domiciled population and still fall flat on its face some day.

VIII

On the other hand, if the Calcutta Metropolitan Region can devise a system by which it can house and service the bulk of its domiciliary population at an average consumption level of Rs. 350 per month at 1968-69 prices for a family of five, it will have achieved conditions much more worthwhile, though less spectacular and less demonstrably modern, than the ongoing projects in Calcutta. That way the Calcutta Metropolitan Region will be much more livable for far larger numbers of people and more endowed with human dignity, than the present projects promise. When the CMDA was set up the idea was to put all the following areas in nine clusters under equitable development programme:

1. Calcutta, South Suburban, Garden Reach;
2. Baranagar, Kamarhati, Dum Dum, South Dum Dum;
3. Panihati, Khardah, Titagarh;
4. Barrackpore, North Barrackpore, Carulia, Bhatpara;
5. Howrah, Bally;
6. Uttarpara-Kotrung, Konanagar, Rishra;
7. Serampore, Baidyabati, Champdani, Bhadreswar;
8. Kanchrapara, Naihati, Halisahar, Kalyani;
9. Chandannagar, Hoogly-Chinsurah, Bansberia.

But as things worked out, the proposal soon was to put all those local self-governing units, which would have to include other towns in the Calcutta Metropolitan Region, under one Central Authority, obliterate their separate statutes and individual identities and put them for an equitable spatial development plan to ensure comparable levels of amenities throughout the Region. As events have shown these expectations were belied. In fact they were bound to be belied what with the inordinate political weight that Calcutta pulls by virtue of its wealth and importance

which preordained the lion's share of available resources for the core. In spite of the arrangements for sharing Calcutta's octroi resources, the other units have not received anything at all like the attention and resources they deserve according to their area and population although they contain embedded in their urban structures large and valuable industrial complexes that are the pride and chief wealth of West Bengal in terms of capital and human skills.

So long as the present apparatus of inefficient information system for the non-Calcutta areas of the Metropolitan Region continues and so long as the decision making body is mainly composed of those living in Calcutta and having their major political and economic stakes in this core, the non-Calcutta areas of the Metropolitan Region will continue to suffer from grievous neglect and fail to discharge adequate complementary role of extended suburbia. It is also necessary to take into account the fact that the usual per capita municipal expenditure in the municipalities outside Calcutta seldom exceeds Rs. 2 whereas the per capita expenditure in the proper core of Calcutta today at the desired level of amenities will be not less than Rs. 130. This is the range of the difference that obtains.

It seems, therefore, important to talk practical politics and think of dividing the region into several clusters of municipal rural continuums around Calcutta, each with its own unique homogeneous entity of demographic, social, economic, human settlement, transportation and servicing features. The better course then would be to evolve a two-level or rather three-level structure whereby (1) at the lowest level a municipality should be in charge not only of its own area but also of the contiguous rural interstices which by virtue of their transportation, servicing and human settlement patterns conveniently and legitimately should fall within its ambit; (2) at the intermediate level the single municipality and its rural appendages with a number of similarly constituted and geographically contiguous municipal-cum-rural areas will make a large cluster of five or six such bodies, with its own confederate body of representatives from each constituent to take decisions of common and interwoven action within the cluster; and (3) the Metropolitan Region itself becomes the apex body of these clusters each of which will enjoy considerable autonomy in decision-making, planning and executing and in personnel programmes and funds.

The formula of sharing of grants and loans among the clusters and individual units ought to be on the basis of weights which will take into account: (1) the degree of backwardness in respect of standard norms for: (a) each municipality, and (b) each cluster; (2) the burden of population in (a) each municipality; and (b) each cluster; (3) the geographical area of (a) each municipality, and (b) each cluster. Some machinery in the nature of a federal award body must sit at stated intervals to adjudicate and fix the shares and proportions of each constituent. Otherwise there seems to be

little prospect of each constituent of the Region receiving its due share of attention and resources. The three levels or tiers should be matched with three levels of planning and executing bodies with well lubricated channels of properly functioning vertical and horizontal information systems. Unless certain measures of decentralization and autonomy of decision and execution are consciously and deliberately built into the structure of the Calcutta Metropolitan Region, this present lopsided concentration of resources on Calcutta will continue to the denudation and deprivation of the rest of the region.

IX

This has been due to another administrative reason also, and that is the multiplicity of implementing agencies, the over-whelming majority of which are entirely Calcutta-based, with their expert knowledge mainly confined to conditions in Calcutta, and whose ideas of scales of working and technology are mainly suited to Calcutta's conditions. These bodies have mainly hitched their wagons to the star of the urban arrangements and aspirations of western, and, of late, American super-cities and, what is worse, they wish to forget about compromises on the scale of amenities that the people in the other municipalities of the metropolitan region can more realistically 'observe and realise'. Of the 24 agencies operating in CMDA, not more than four or five have sensible ideas of what will actually work in non-Calcutta conditions. Let us have a look at the agencies and their distribution according to area of knowledge and interest.

AGENCIES OPERATING FOR CMDA WITH
(a) SPECIALIST KNOWLEDGE OF CALCUTTA PROPER
AND (b) KNOWLEDGE OF WORKING IN NON-CALCUTTA AREAS

<i>Specialist Knowledge of Calcutta proper</i>	<i>Knowledge of Working in non-Calcutta Areas</i>
(1)	(2)
1. Calcutta Corporation	1. Howrah Municipality
2. Calcutta Improvement Trust	2. Howrah Improvement Trust
3. Calcutta Metropolitan Planning Organization	3. Other Municipalities
4. Irrigation and Waterways Directorate	4. Public Health Engineering
5. Housing Directorate	5. Health Directorate and Hospital Facilities
6. Public Works Department	6. Public Works (Construction) Board
7. Public Works (Roads) Directorate	7. Zila Parishad

Continued

(1)	(2)
8. Calcutta Port Commissioner	8. CPHERI
9. Calcutta Tramways Co. Ltd.	9. Forest Directorate
10. Calcutta State Transport Corporation	
11. Oriental Gas Co	
12. Calcutta Metropolitan Water and Sewage Authority	
13. CMDA and Others	
14. Central Public Works Directorate	
15. Bustee Improvement Agencies	
(a) CMPO, (b) Central Public Works Directorate, (c) Calcutta Corporation, (d) Howrah Improvement Trust, (e) CMDA	

Although on paper there are as many as nine or more estimable organizations which claim expert knowledge of non-Calcutta conditions, yet as we have seen before, they have not been furnished exactly with a surfeit of funds, nor do they find it possible to ask fundamental questions or experiment on possible policy alternatives. For example, why should the norm be 40 gallons of protected and filtered water per person, where there is hardly a gallon of it available in Bansberia or three of it in Uttarpara? Even if for argument's sake 40 gallons per head per day were made available in Bansberia or Uttarpara where would the average householder at his level of poverty find the pails and buckets to store them in or the drainage through which to get rid of them after use? Why should it be necessary to go in for underground sewerage and sewage instead of individual or group underground septic tank latrines or decentralized small-scale sewage purification plants? Why should garbage disposal in the municipal—non-municipal continuums be not worked out in terms of small scale compost grounds, the composts of which would assist in gardening within the region, so vital for keeping up the nutrition level of the region? Why should we not build internal networks of narrow roads of lower specification within each municipality or cluster, which would be suitable both for intra-cluster pedestrian safety and the low density of passenger car and freight transport, and supplement them with arterial passenger through clusters or ring roads around clusters of better specifications for mass transit and rapid inter-cluster circulation? In the very nature of the structure of the organizations themselves and their interrelationships and vested interests, and the authority they have wrested for themselves over the years, new, nonconformist or inconvenient questions are hardly allowed to break into any serious discussion of future plans. And as everyone knows, when people who knew all the answers sit around a conference table, new ideas fly out of the window.

Both in the earlier Calcutta Metropolitan Planning Organization (CMPO) and the later Calcutta Metropolitan Development Authority (CMDA) although the professed manifesto has been the development of the Calcutta Metropolitan Region as a whole of which Calcutta and Howrah are to receive no more importance than as the core, yet in terms of concentration of technical appraisal, development of data, and last but not the least, investment, the Calcutta Corporation Area has enjoyed almost the monopoly of funds and project execution. Its immediate peripheral areas like Howrah, Bally, Baranagar, Bhatpara and Dum Dum have received the bulk of what was left over. For one thing, thanks to the work of the CMPO and the WHO's preliminary plan on water supply and sewerage, this core area offered the largest amount of data to be manipulated. Secondly, there was also a number of executing organizations ready at hand who knew this area best and how to set about it. Thirdly, Calcutta's needs and political and economic weight has always loomed so much above those of the peripheral areas that funds automatically gravitated to Calcutta (with fallouts to Howrah) in spite of protests from time to time. The following rough abstract constructed from the last CMDA Review Committee's statements will give a bird's eyevew of the geographical distribution of funds:

TOTAL EXPENDITURE IN THE FOURTH PLAN PERIOD, 1969-74

<i>Head of Expenditure</i>	<i>Total CMDA Area (Rs. in crores)</i>	<i>Expenditure on area outside Calcutta Corporation (but includes Howrah, Dum Dum) (Rs. in crores)</i>
1. Water Supply	17.20	3.87
2. Sewerage and Drainage	31.08	6.19
3. Garbage Disposal	2.57	—
4. Environmental Hygiene	0.46	—
5. Traffic and Transportation	23.18	7.66
6. Traffic : Other Schemes	11.48	—
7. Special Projects, Like gas Distribution, Hospital Facilities, Primary Schools, Parks and Play Grounds	7.88	Breakdown not available perhaps about Rs. 1 crore
8. Housing and New Area Development	8.77	0.04
9. Bustee Improvement Scheme	10.61	Expenditure on Baranagar, Kamarhati Rishra, Champdani and fringe not obtained
Total	113.23	17.76

Of these Rs. 18 crores again, or perhaps at a liberal estimate of nineteen, the bulk of the expenditure is a misnomer. Although professedly made on areas outside Calcutta Corporation, it went really to buttress the infrastructure of Calcutta Corporation area and it will need a more searching analysis to find out how much of it really went to augment the resources of municipalities outside of Calcutta Corporation and Howrah.

The Calcutta Metropolitan Region extends over an area of about 550 square miles but the bulk of the expenditure has benefited not much more than 50 square miles of space. This inordinate concentration of investment on one-tenth of the total area, comparable in its enormity of disproportion to the income distribution curve of our country, has had the effect of accentuating almost all of the problems of Calcutta proper instead of relieving it or distributing them more equitably in the Calcutta Metropolitan Region.

X

Having invested about Rs. 130 crores in the space of three years over and above currently budgeted outlays—and again, of course, I would repeat that Rs. 130 crores is not a figure to boast about, having regard to the age long neglect that Calcutta has suffered from *vis-a-vis* other cities like Delhi and Bombay—it may be time to pause and reflect whether this scale of investment and distribution of new assets is going to benefit Calcutta Metropolitan Region the way that was originally envisioned. For one thing, even if we can scrape together the money by way of grants and loans—international and national—for the improvement of Calcutta, can we prevent grievous fresh influxes of populations into the city which will speedily bring to nought whatever investments have been made, and would this be the way of equitably distributing the population in the Metropolitan Region, of guiding populations away from the core? For one thing, against, it is becoming increasingly plain that for at least the major or million plus cities of India, there is no way out but to introduce a permit system for screening fresh immigration who will have to pay an entrance fee either by way of terminal tax or some appropriate device to fill identified new jobs in the city. Such a device will help to raise funds sorely needed for improvement, maintenance and renewal and to keep down the level of unemployment or the level of poverty-induced tertiary sector of very low levels of employment, which have a way of consuming more than they produce or invest. Such a device also seems inescapable if only to rationalize and keep down growing inter-state tensions and scrambles for jobs as between the son-of-the-soil and the alleged intruder. It is no use pretending that migrant-non-migrant tensions particularly in large cities are a passing phase. They will increase and it seems imperative to build in rational, well-designed safeguards well ahead of time to contain them.

In the next place while it is inescapable for Calcutta and Howrah cities proper to complete some of the schemes embarked upon, it seems important in the greater metropolitan region to opt for standards and norms which the people will be capable of observing and realizing, instead of thrusting on them standards and norms of development which are too precious and are irrelevant, being more suited to highly developed economies. Instead of spending patently on consumption areas, the greater need obviously in the Calcutta area today is to develop low-value lands, build up solid new blocks of electricity generation and industrial water supply. If Calcutta could have an increment of 200 MW of electricity and a fresh supply of industrial power, it would be psychologically and economically in much better shape than with its newly acquired attributes of conspicuous consumption.

It is quite plain that India will not be able in the next two or three plans to afford the level of industrial investments which will in addition to the major tasks of economic regeneration, transform the populations of major cities into blue or white collar earners of the western breed at the latter's income level. It should be enough for India's purposes of socio-economic development, modernization and cultural change if a level of economic activity is generated which gives each metropolitan region family a level of income of about Rs. 400 at 1968-69 prices and a level of consumption of about 325-350 for a family of five. But such a family will be an estimable asset builder to the region even if he cannot afford a house in Calcutta proper. It is important to provide for him within the Calcutta Region and the effort may be more worthwhile in the national interest.

XI

The great bulk of the population even in major cities of India live in the environment of urban villages and the level of their economic pursuits are not above those that are required for urban villages. At the height of their gracious days earlier in the century cities like Calcutta, Allahabad, Lucknow or Madras, were no more than conglomerations of urban villages. People can be quite happy in urban villages around a modern city core provided certain amenities are assured in terms of settlement lots. First is housing and shelter, particularly for the very low income groups which the CMDA has neglected not only in the non-Calcutta parts of the Region but even, sadly enough, in Calcutta and Howrah proper. Here as we have discussed in respect of Bangladesh refugees, houses need not be of brick, steel and concrete, but of brick or semidurable material with mud or lime mortar and tiled roofing. In any case, India will have to forget about steel and cement for low and middle income housing, for steel and cement will be scarce, prohibitively expensive and sorely needed for more urgent national purposes. Secondly, economies of

scale work up to a certain point, and it is getting increasingly plain that a central water supply, sewage, sewerage and drainage system for the entire Calcutta Metropolitan Region, such as has been planned for Calcutta, is something which the resource traffic will not bear. They will have to be broken up into smaller mini-systems aiming at self-sufficiency for defined geographical spaces of say 10 to 15 square miles each, conceived, planned and executed on scales which local resources can maintain and replace. At most they, particularly water and drainages, can be connected by light grids to contiguous systems for emergencies like breakdowns for short periods. Thus large central water purification plants will have to give way to small decentralized plants catering to defined units of populations receiving their supply from large bore deep tubewells or from nearby rivers or even large protected surface tanks. Similarly, sewage, sewerage, drainage and garbage disposal systems will have to be decentralized and broken up small and located in the shape of network within clusters, each of which can be conveniently maintained by a municipality or the cluster and which can be conveniently renewed without the necessity of renovating the whole network. Garbage disposal and nightsoil treatment must certainly be addressed to compost making to assist the raising of vegetables and crops for city consumption.

The prime need seems to be to think in terms of hierarchical clusters, graduated according to their levels of infrastructural development and mark off fairly homogeneous blocks with their rural interstices and surroundings tacked on to them for future growth and expansion. In the next place to initiate a planning process which will integrate the urban and rural spaces and carve out areas for development of new industrial and residential sites and location of urban infrastructures like water processing and filtration and recycling plants, sewage recycling plants, and rail and road networks. In the Indian situation water supply, sewerage and sewage are possibly indifferent to scale in the social benefit context. On the contrary scale is liable to bring about positive diseconomies inasmuch as it fails to squeeze out a great deal of private savings which people would be forced into investing, were they required to sink their own tubewells, septic tanks for sewerage, utilize waste water for kitchen gardening and dig channels and soak pits for throwing the excess out.

But the most important element in such cluster growth that will contribute to the integration of a metropolitan region is a well designed network of light and heavy traffic roads and railways, arterial and circular, which will ensure fast transit from cluster to cluster and to the core and yet provide reasonable facilities within each cluster. This is of the essence if we are to actively assist in dispersal of population, an adequate interaction between rural and urban habitations, stimulate the ripple effect to wider and still wider rings of pleasant semi-urban territory around the metropolis.

XII

The maintenance of services, too, will need re-examination. I had pleaded for this in 1970-71 at the beginning of the new CMDA programme in respect of the Bustee Improvement Scheme. Having regard to the unused and unemployed educated manpower of young men and women in the bustees, I had pleaded that each bustee should be divided conveniently into blocks of population of about 600 to 1000 or at most up to 2000, and the amenities provided in each should be put under charge of educated unemployed young men and women of the block appointed to check in four-hour shifts on stated days: (a) by house to house visit that the taps, water points, sewage, drainage, street and drain pavings and conservancy services are working properly; (b) that the young children are regularly attending school, that their uniforms and meals are all right, that they have received the right inoculations; (c) that pregnant and lactating mothers, newborn infants and children are receiving adequate care in the community centre. For each two blocks of 4,000 bustees population there should be a schoolhouse-cum-clinic-cum-nonformal adult education centre, which will similarly be looked after by semitrained young men and women drawn from the community, to run primary or middle school education up to standard VI, to run a rural health clinic-cum-child and mother health care and nutrition centre, and a nonformal adult education centre to be conducted in four-hour shifts all in the same community building which should have a playground attached to it. The community should be responsible for these services. Payments to young men and women need be made only on part-time basis, at rates not exceeding Rs. 150 to 200 per month for four-hour shift per working day. Nodal services at levels higher than these will have to be provided by either the municipality or the cluster authority. Some system of this kind seems imperative to generate stakes in the community and stimulate community participation in preserving and reviewing what has been invested. Otherwise as in the improved bustees in Calcutta, an improvement accomplished becomes nobody's business to maintain and nobody feels called upon to regard it as his own. A sense of involvement through remunerated recruitment from among local young men and women seems essential for propagating a much needed sense of community involvement which seems a precondition of the new urban movement. That this is no utopian wish is borne out by the fact that the most successful and eagerly sought schemes of the CMDA have been offers of schoolhouses, health centres and short connecting roads on matching contribution basis to small communities in the outer suburbs of Calcutta.

But at the moment the most important thing seems to be to think anew about the type of metropolitan urban renewal process that will really suit our economic and social condition. This applies equally or even more

to the District and subdivisional towns of West Bengal, the utter neglect of which for three decades had not only added to the problems of the Calcutta Metropolitan Region but grievously hurt the State's agricultural development. Undoubtedly there is a great deal of thinking, planning, studying and experimenting to be done. But, it is clear that to attempt transplant wholesale the apparatus of renewal of large cities in developed countries will hardly work. The most important thing is to own up that they are a trifle too precious and irrelevant to our process of development, and that it is much more important to upgrade our semi-urban conditions and attract industries and populations to new peri-urban sites by providing such attributes as will endow them with self-sufficient urban services on reduced or modified scales and even technologies that will be more appropriate to the socio-economic status of the citizen and yet will put him on the path of modernization. Above all, services that the citizen will be enabled to sustain and when necessary renew. And further to weld these urban villages in a skilful system of internal roads and lanes and inter-communicating fast traffic highways and railroads to the metropolitan core.

Finally, to work out a viable three-tier system by virtue of which planning and executing responsibilities can be decentralized and fiscal arrangements laid down within overall centrally articulated goals and targets.

It is unnecessary to rush headlong to repeat the mistakes of pollution, congestion and excommunication of resident populations so often made in expensive city renewal projects. It is much more important to preserve an existing metropolitan population and help in its growth and keep the levels of pollution and congestion as low as possible. Above all it is important to go in for these improvements which will work and the resident population, in the words, of John Stuart Mill, can 'observe and realize', that is, maintain and renew with no great difficulty. A vast network of well-knit contented urban villages, with low levels of pollution but with greater degrees of decentralized community participation may well be India's answer to sweltering highrise, highdensity, high-pollution, circulation-choked cities, such as Calcutta is speedily degenerating into. India's metropolitan growth can yet proceed on a path that will fulfil its own needs and still provide clues to urban growth for low income countries.

Calcutta Slums

Public Intervention and Prospects

M.S. MAITRA

AMONGST THE long list of ills ascribed to Calcutta, its slums occupy a high place in agenda for urgent public intervention. Unique by themselves, the Calcutta slums stand out as an unparalleled specimen in terms of occupants, structure and size. These are characterized by a long history of origin, a traditional tenancy structure protected by tenancy laws, ethnic heterogeneity, mixed value system of occupants, general apathy towards organized community actions. The classical slums of Calcutta have a three-tier tenancy structure—the landlord who owns the land, the hutowner (locally termed as 'Thika tenant' or short-duration lessee) who under a short-term lease from the landlord erects, owns and lets out the huts to slum dwellers (locally termed as 'Bharatia' or bustee tenants) on monthly rental terms. The traditional Calcutta Slums, lawfully exist as a private response to the housing market. Here lies the basic difference between what have been described as 'Urban Slums' elsewhere, and the Calcutta slums locally known as 'Bustees'. The only common feature is intensive overcrowding, gross deficiencies in basic services, filth and squalor, ill-paid jobs under the petty manufacturing sector and unproductive self-employment in the impoverished individual enterprise sector. These slums are neither 'transitional' nor 'uncontrolled' in the real sense: they are traditional and have been in existence long before the City framed its laws and controlled devices to regulate the building activities.

IMPLICATIONS OF A THREE-TIER TENANCY AND IMPACT OF REGULATORY INTERVENTION.

The Calcutta Municipal Act of 1899 had laid down regulatory provisions for 'Bustee' with a view to securing a minimum level of environmental quality for the City's slums. The C.M. Act, 1899 defined 'Bustee' as "an area containing land occupied by or for the purpose of any collection of huts: (a) standing on a plot of land not less than ten cottahs (1/6 of an acre) in area and bearing one number in the assessment book or (b) stan-

ding on two or more plots of land which are adjacent to one another and exceed in the aggregate one bigha ($\frac{1}{3}$ of an acre) in area". It sought to regulate the layout of streets, passages and huts as also their dimensions and specifications to secure ventilation and light and to ensure provisions for common facilities, like, surface drains, water supply, latrines, bathing platforms, lighting of streets, etc., and their proper upkeep and maintenance at the cost and expense of the land owners and hut owners, as the case may be. Provisions were also made for the preparation of 'Standard Plans' by the Calcutta Municipal Corporation, on its own motion, for purposes of carrying out, on sanitary reasons, improvements of bustees and requiring the owners of bustees to carry out improvements in accordance with the 'Standard Plan' at their cost. Penalties had also been prescribed under rules made thereunder for non-compliance of directions or requisitions lawfully issued thereunder. The Calcutta Municipal Act of 1923, in replacement of the 1899 Act had the same provisions insofar as they related to bustees. In the Calcutta Municipal Act of 1951 which replaced the 1923 Act, the basic regulatory provisions in relation to 'bustees' also remained unaltered except that its 10 cottahs ($\frac{1}{6}$ of an acre) and the monetary limits of the penalties for contravention and non-compliance of directions and requisitions were raised. In actual practice, however, the regulations were either flouted with impunity or not enforced in the spirit the enactment really intended, for historical and economic reasons. The basic ingredient of the C.M. Act requires the intended improvements in bustees, to be carried out at the cost and expense of the owners of the bustees under directions and requisitions of the Calcutta Corporation. 'Owners' have been defined under the C.M. Act as "persons for the time being receiving the rent of any 'land or building' (which expression includes a 'bustee') or of any land or building whether on his own account or as agent or trustee for any person or society or for any religious or charitable purpose or as a receiver or who would receive such rent if the land, building or part thereof were let to a tenant." The bustee owners, by and large, belonged to the old trading and land-owning families of Calcutta. By virtue of their old trading and feudal associations with the pre-colonial rulers, they enjoyed a status of 'nobility' which they managed to retain during the colonial regime to the mutual interest of both the colonial masters and the 'nature nobility'. This land-owning class wielded a lot of influence in the civic administration both from within and outside the Calcutta Municipal Corporation; and saw to it that the improvements of bustees owned by them on the lines enacted are stalled, so that the cost burden of such improvements neither fell on them nor passed on to the hutowning tenants installed under their patronage; nor even on the bustee tenants; not merely to save erosion of the rental incomes from the hutments, but also to maintain a *status quo* in the rent structure of hutments. During subsequent years when the land values had risen considerably and

the values of 'nobility status' had substantially eroded, the land owning class became more concerned with redemption of the bustee land so as to secure the best value for them. Success was though limited on account of popular resistance, this led to eviction of large number of 'Thika tenants' as also the bustee dwellers. In the changed context, the question of blocking up valuable land resource for a non-remunerative use as bustee and making investments for their improvements without assurance of commensurate returns and *de facto* perpetuation of such unproductive land use forestalled the improvement actions on the lines contemplated under the later revisions of the C.M. Act.

Let us examine the other side of the coin. What are the factors which inhibit private investments for improvement of bustees? Not only the rent paying capacity of the bustee tenants is extremely limited, but also the enhancement of rent payable by the Thika tenants to the land owners is restricted to 12½ per cent of the rent prior to improvements in terms of another enactment the Calcutta Thika Tenancy Act of 1949. The C.M. Act also empowers the Calcutta Corporation to get the improvements done out of its own funds, in default of the owners of bustees to act according to its requisition within a time limit fixed, and to declare the expenses so incurred as 'improvement expenses' and as 'a charge on the bustee', and to recover in instalments together with interest thereon at the rate of not less than 6 per cent per annum over a period not exceeding 30 years. The implications of this provision are two-fold: firstly, the municipal funds available at the disposal of the Calcutta Corporation must be adequate to take recourse to this alternative even on a modest scale; and secondly, the repayment liability of the bustee owner on account of the improvement expenses charged on the bustee, even over a period of 30 years at 6 per cent interest per annum, would at least be comparable to the amount he would be entitled to as land rent under the Calcutta Thika Tenancy Act of 1949. The facts are otherwise: firstly, the state of municipal finance has never been so comfortable as to permit involvement of Calcutta Corporation in such a venture; and secondly, the repayment liability for the average 'improvement expense' of Rs. 150 (at 1950 level of prices) per bustee dwelling as 'a charge on the bustee', even over a period of 30 years at 6 per cent interest per annum, being Rs. 11 per annum or about Re. 1 per month, the owner of the bustee could not be expected to be so benevolent as to accept the charge, when under the provisions of the Calcutta Thika Tenancy Act of 1949, he was debarred from charging a corresponding increase in land rent from the Thika tenants. This is an instance how one enactment militated against the other, even though the genuine intentions of both were to mitigate the hardships of the same target group.

'THIKA TENANCY' PROTECTED AND INSTITUTION LEGITIMIZED

The special character of these settlements and their tenancy evoked special legislation for them. The Calcutta Thika Tenancy Act of 1949 was the response mainly with a view to regulating the rights and liabilities of the Thika Tenants and their landlords. It was more than 30 years ago, soon after the country attained independence, that the need for such a legislation was felt. This was followed by several amendments in 1953, 1959, 1964, 1967, 1968 and lastly in 1969, all arising out of court interpretations of the provisions in the Original Act of 1949 and were intended to be weighed in favour of the 'Thika' tenants mainly to protect them against eviction. Though only regulatory in character, this constitutes the first major step towards public intervention in the private management of Calcutta slums. But the instrument of intervention is indirect and is invocable in law courts only at the instance of the aggrieved parties. The result is a large body of case laws only to be taken advantage of by the legal pundits and the two stronger contenders, *viz.*, the landlords and the 'Thika' tenants in the three-tier tenancy hierarchy. While the rights of the 'Thika' tenants and their landlords are adjudicated upon, their obligations towards the 'Bharatia' tenants, are seldom called to question.

THIKA TENANTS: THEIR RIGHTS AND PRIVILEGES

Thika tenants have been defined under the Calcutta Thika Tenancy Act of 1949, as follows :

"Thika tenants means any person who holds whether under a written lease or otherwise, land under another person, and is or but for a special contract would be liable to pay rent, at a monthly or any other periodical rate, for that land to that another person and has erected or acquired by purchase or gift any structure on such land for a residential, manufacturing or business purposes and includes the successors in interest of such persons, but does not include a person:

- (a) who holds such land under that another person in perpetuity; or
- (b) who holds such land under that another person under a registered lease, in which the duration of the lease is expressly stated to be for a period of not less than twelve years; or,
- (c) who holds land under that another person and uses or occupies such land as a 'Khattal' (Cattle shed)."

'Land' means here land without any pre-existing structure thereon. Where the holding includes both land and structure thereon, it is no 'Thika' tenancy but comes under the purview of the Premises Tenancy Act. In a 'Thika' tenancy, the structure on the land is required to be erected or

acquired by the tenant. It has been held that to be a 'Thika' tenant a person must be tenant of the land and secondly, he must have a structure thereon either erected by him or acquired by purchase or gift. 'Thika' Tenancy rights is transferable and heritable. In 'Thika' tenancy, the title in the land remains with the landlord but the title in the structure either by (i) erection or (ii) purchase or (iii) gift or (iv) succession belongs to the tenant. The purpose of such tenancy is limited by three fold objects: (i) residential, (ii) manufacturing, and (iii) business (other than cattle keeping and milk trade). To become a 'Thika' tenant the conditions of the statute as aforesaid must be complied with, when land is let out to him. A trespasser erecting structure on another's land does not become a 'Thika' tenant. Therefore a successor-in-interest cannot enlarge the original inheritance. A tenant in a bustee who satisfies the statutory conditions of 'Thika' tenancy may be a 'Thika' tenant—the onus of proving it rests with the Thika tenant.

The grounds on which a 'Thika' tenant may be objected are also laid down in Amending Act XXIX of 1969.

THIKA TENANT—BHARATIA RELATIONSHIP

The act also lays down the duty of a 'Thika' tenant to provide amenities for bustee tenants (Bharatias). The 'Thika' tenant must keep the structure tenanted to the 'Bharatia' tenants in a condition fit for habitation and ensure proper water supply, conservancy and sanitary services and other essential services, as the 'Controller' (appointed under the Act) may think proper, regard being had to the condition of such supply and services as prevailing in the locality. Failing to do so, the Controller can cause a notice to be secured on the 'Thika' tenant for securing the necessary services.

The Bharatias are required to make organized efforts to get their grievances examined and redressed through the 'Controller', who, in turn, has to go through the legal and procedural rigmaroles and may eventually end up in achieving very little. The Bharatias get disillusioned and prefer to resign to their given state of living, rather than to invoke the provision of the Act purporting to enforce the obligations of the Thika tenants. The provisions in the Thika Tenancy Act may be regarded as a specialized version of the West Bengal Premises Tenancy Act of 1956. While the latter regulates the relationship between the landlord and the tenant in general, the former does so in respect of a set of landlords and special tenants who do not 'sublet' in the strict sense but let out to bustee-tenants' (Bharatia's) structures erected, or acquired by them on land comprised in the holding leased out to them by the landlord. The relationship between the 'Thika' tenants and these bustee tenants, the 'Bharatias', is neither regulated nor controlled by either of the Act, thus leaving the

issues open insofar as it relates to fixation of rent and ejection. The framers of the legislation have in their idealistic wisdom postulated that the 'Thika' tenants, by and large benevolent and philanthropic, are the only oppressed party and given the needed relief and protection. The provisions in the enactment are so heavily weighed in favour of the 'Thika, tenants that omission of the principles of equity and *quid-pro-quo* can not go unnoticed. While the rights and protection of Thika tenants have been enlarged by the amending Act of 1969, these have not been correspondingly balanced by larger obligations to their 'Bharatia tenants. The only protection the 'Bharatia' have under the Thika tenancy Act, is that upon determination of the interest of 'Thika' tenant or his right in the land comprised in a holding, as a result of ejection from or of surrender or abandonment of the holding by the 'Thika' tenant or otherwise, any structure standing upon such land shall vest in the landlord and that any 'Bharatia' in possession of such structure or part thereof, shall, without any application being made, be entitled to continue in such possession and shall be deemed to be a tenant in respect of such structure or part thereof, under the landlord, on the same terms and conditions as were applicable prior to such vesting on the landlord and the land tenancy regulated as per provisions of the West Bengal Premises Tenancy Act of 1956. This provision places the Bharatia tenants of bustees at par with all other tenants of non-bustee premises in the City. The relief intended to be afforded by this provision may in practice be short-lived. The framers of the Act seem to have ruled out the possibility of well-to-do 'Thika' tenants becoming owners of the bustees by outright purchase of the lands comprised in their holdings from the respective landlords. In that event, the relationship between the Bharatia tenants of the bustee and the erstwhile Thika tenants, now landlords, will be determined by the West Bengal Premises Tenancy Act of 1956. The Thika tenants stepping into the shoes of the landlords are most unlikely to have made the investment on acquiring the bustee land just for the pleasure of being landlords. In a suit for ejection under the West Bengal Premises Act, the tenant is entitled to protection against eviction only if he pays or deposits in Court all arrears of the existing rent due from him up to the deposit together with interest thereon at the rate of 8.1/3 per cent from the due date and thereafter deposits month by month rent. The other protection, though a remote possibility, is that if under the right conferred upon the Thika tenant under the amended Act of 1969, he proceeds to build on the land comprised in his holding, a pucca structure, he shall not be entitled to object a Bharatia from the existing structure or part thereof possessed by Bharatia tenant for the purpose of or on the plea of erecting a pucca structure; provided that the Thika tenant may obtain vacant possession of the structure in possession of the Bharatia tenant by providing him with alternative accommodation and on the specific

condition that immediately on completion of the 'pucca structure' he shall offer accommodation to the Bharatia tenant in the 'pucca structure' so built at a rent *which shall in no case exceed by more than 25 per cent* the rent which the Bharatia was paying prior to the construction of the 'pucca structure'. This protection is in practice illusory as no Thika tenant will ever invest in 'pucca' construction if he is not assured of commensurate return. Rent enhancement ceiling of 25 per cent is no inducement for making such investments.

In sum, the Calcutta Thika Tenancy Act *de facto* achieved only a limited objective. It reinforced the institutional base of Thika tenancy and helped to curb large scale eviction of Thika tenants. But it could neither evoke any change in attitude of the Thika tenants in the discharge of their statutory obligations towards the Bharatias, nor could it protect the later from being charged 'unfair' rent or even ejection by the Thika tenants on grounds of default in payment of rents. It served to protect the interests of 25,000 Thika tenants of Calcutta bustees but failed to secure the environmental quality of bustees and safeguard tenancy rights of over a million Bharatia tenants under them.

ACT OF 1958—A DISRUPTIVE SUBSIDY-NOURISHED TARGET MISSED CONVENTIONAL 'HOUSING' APPROACH

The first ever direct intervention in Calcutta slums was conceived in 1968 when the Calcutta Slum Clearance and Rehabilitation of Slum Dwellers Act (Act XX of 1958) was enacted. The form of intervention, envisaged under this enactment aims at clearance of slums and rehabilitation, of slum dwellers by demolition of existing huts and structures and erection of 'planned buildings' in their place. Two essential preconditions for such action are:

- (a) taking possession of the land comprised in the slum area together with all huts and structures standing thereon, and
- (b) temporary shifting of the occupants from all huts and other structures to facilitate construction activities as planned.

It is, therefore, implied that the instrument designed does not infringe with the provisions under the Calcutta Municipal Act of 1951 and the Calcutta Thika Tenancy Act of 1949 (as amended by the Act of 1969) nor with the rights and interests of the landlords and Thika tenants, as conferred by the said Acts. This is sought to be taken care of by repealing the provisions of the C.M. Act insofar as they relate to 'bustees' in respect of any slum area where the Calcutta Slum Clearance and Rehabilitation of slum dwellers Act of 1958 is intended to be applied. Cognisance has also been taken of the provision in the Calcutta Thika Tenancy Act,

barring its application to: (a) Government lands, (b) any land vested in or in possession of: (i) the State Government, (ii) a port authority of a major port, (iii) a railway administration, or (iv) a local authority, and (c) any land which is required for carrying out any of the provisions of the Calcutta Improvement Act, 1911.

The process of acquisition of rights and title to the land and huts, etc., within the slum areas is sought to be streamlined by the following steps in sequence:

- (a) issue of a notification proclaiming the 'intention' of the State Government to declare an area, wherein the Government is 'satisfied' that the huts or other structures used or intended to be used for human habitation are 'unfit for such purposes' and the 'unhealthy or unhygienic condition' thereof or the huts or other structures therein is dangerous or injurious to public health or to the health of the inhabitants of the area, as a slum area;
- (b) consideration of written representations made to the State Government by person or persons affected by such notification upon its publication and within two months of such publication;
- (c) upon consideration of such representations, issue of notification purporting to either withdraw the original notification or declare such area or any portion thereof to be a slum area; and
- (d) issue of a final notification within one year after an area has been declared as a slum area to the effect that the State Government has decided to acquire such land together with all huts and other structures standing thereon.

Upon publication of such final notification as in (d) above, any Officer of the State Government authorized by it in this behalf may take possession of the land comprised in the slum area together with all huts and other structures standing thereon, *and thereupon* such land and huts and other structures shall vest absolutely in the State Government free from all encumbrances. Taking physical possession of such land together with huts and other structures standing thereon is however subject to two proviso;

- (i) that no possession of any hut or other structures shall be taken 'until the expiration of two months from the date of service of a notice to quit such hut or structure'; and
- (ii) that such possession of huts and structures shall not be taken unless alternative accommodation 'as near as may be within a radius of one mile' from the slum area has been offered to the occupier of such at a rent which the State Government is satisfied is comparable to what was being paid by the occupier or if no rent

was being paid by the occupier, what was payable for similar accommodation; and the occupier has refused or neglected to occupy such alternative accommodation within the time prescribed.

Thus the two important ingredients of legislation, *e.g.*, acquisition of rights and title to the land together with huts and structures standing thereon and taking possession thereof, militated against the rights conferred on the Thika tenants under the Calcutta Thika Tenancy Act and naturally attracted Court intervention and judicial pronouncements on action initiated by the public agencies under the provisions of the Calcutta Slum Clearance and Rehabilitation of Slum Dwellers Act of 1958. An apparently viable alternative is to acquire vacant land of required size if available near the target slum area, under the 'omnibus' Land Acquisition Act of 1894 for a 'public purpose' (subject again to judicial pronouncement regarding justiciability of the public purpose) and to proceed with the construction of the rehabilitation tenements for the slum dwellers. The underlying idea is to achieve two things at the same time—one to rehabilitate the slum dwellers of the target slum area in better housing in a planned environment and the other to take possession of the land and huts when vacated in terms of Calcutta Slum Clearance and Rehabilitation of Slum Dwellers Act for being utilised for similar or other public purposes. This alternative approach was attempted for several slum areas by the State Housing Department. In actual practice, none of the two objectives was attained—neither the Slum dwellers in the 'designated' slum areas moved into the rehabilitation dwellings, nor as a corollary, the land comprised in the respective slum areas could be taken possession of by the Government. A new set of people, categorized, as 'economically weaker sections' of the community moved into these rehabilitation dwellings. These were families (having income less than Rs. 350 per month) out of city's slums. They were not pre-identified and had to be selected out of a very large target group termed 'economically weaker section' (EWS).

ROLE OF CALCUTTA IMPROVEMENT TRUST—LIMITED OBJECTIVE AND SUBSIDY-BURDENED CONVENTIONAL 'HOUSING' APPROACH

The Calcutta Improvement Trust, constituted under the Calcutta Improvement Trust Act of 1911, had also to provide rehabilitation, facilities to slum families affected by city improvement schemes. In terms of the CI Act, 'an improvement scheme' may be one of the following types or combination of any two or more of such types or of any special feature thereof:

- (a) a general improvement scheme;
- (b) a street scheme;

- (c) a housing accommodation scheme; and
- (d) a re-housing scheme.

The scope of 'general improvement scheme' is fairly wide. The CIT may proceed to frame 'a general improvement scheme' with the approval or direction of the State Government, when it appears that:

- (a) any building in any area used as dwelling places are unfit for human habitation, or
- (b) danger to the health of the inhabitants of any area or that of a neighbouring area is caused by: (i) narrowness, closeness and bad arrangement and conditions of streets or buildings or groups of buildings in such area, or (ii) want of light, air, ventilation or proper convenience in such area, or (iii) any other sanitary defects in such area, and
- (c) any area is undeveloped or has been developed without a satisfactory plan or design and that it is necessary to develop or redevelop it according to a better plan.

The CIT may also frame 'a street scheme' when it is expedient to lay out new streets or to alter existings streets (including bridges, causeways and culverts) for the purposes of:

- (a) providing building sites, or
- (b) remedying defective ventilation, or
- (c) creating new or improving existing means of communication and facilities for traffic, or
- (d) affording better facilities for conservancy.

A 'housing accommodation scheme' may be framed by the CIT when it is expedient and for the public advantage to provide housing accommodation for any class of persons in any area to which the CI Act applies.

'Rehousing schemes' may also be framed by CIT for 'construction, maintenance and management of dwellings, shops and other classes of accommodation, as it may consider, ought to be provided' for persons: (a) displaced by the execution of any improvement scheme sanctioned under the CI Act, or (b) likely to be displaced by the execution of any improvement scheme intended to be framed or sanctioned under the Act.

The CI Act further stipulates that when 'a general improvement scheme' or 'a housing accommodation scheme' or a combination of both, 'is likely to involve displacement of dwelling in a bustee, provisions for rehousing such persons *shall be made* either in the same scheme or by another scheme and the scheme or schemes as the case may be together with

the *statement of the rent or rents proposed to be charged for such rehousing shall be submitted to the State Government for its approval*; and in considering such scheme or schemes the State Government *shall have regard to the rent or rents indicated in the said scheme or schemes or accommodation to be provided for the displaced bustee dwellers, and may, if necessary, give financial aid to the CIT in order that the rent may be such as in the opinion of the State Government is reasonable*. The CIT by and large succeeded to shift the affected bustee families to the rehabilitation tenements through a mixture of inherent compulsion for shifting and added incentives in the form of higher design norms for the rehabilitation dwellings and ceiling chargeable rents of Rs. 20 per month even at 1970 level prices.

The CIT's efforts of rehousing the slum dwellers in rehabilitation schemes could in effect be regarded as a bye-product of their city improvement schemes and, therefore, had a limited objective. Viewed in its totality, the impact of CIT's slum rehabilitation schemes, as instruments for public intervention in the matter of calcutta slums, is hardly of any consequence. In terms of cost they were prohibitive and in terms of effectiveness, negative; as a sizable portion of the rehabilitation dwellings are not lived in by the displaced sum dwellers but are surreptitiously sublet at much higher rents to others in the readily exploitable situation of acute housing scarcity. In sum, public interventions in the form of slum clearance *per se* and rehabilitation of slum dwellers in conventional structures has failed to achieve the avowed objectives.

ACT OF 1972—AN INSTRUMENT OF PRACTICAL WISDOM; SHIFT OF EMPHASIS FROM CONVENTIONAL HOUSING TO ENVIRONMENT AND SHELTER

The latest among the enactments for direct public intervention in slum areas of Calcutta is the West Bengal Slum Areas (Improvement and Clearance) Act, 1972 (West Bengal Act of 1972). Though the social stigma associated with the expression 'clearance' should have been taken note of by the framers of the Act, the underlying spirit behind it does take cognisance of this. The Act could have instead been titled as 'The West Bengal Slum Areas (Improvement and Redevelopment) Act'. The most striking feature of this enactment is that it (though) indirectly but unequivocally recognizes for the first time the role of Calcutta Slums in the housing market and as a last resort for the families priced out of all other forms of legalized tenancy settlements the overcrowded city offers. It betrays the practical wisdom of the framers of the Act and their realization of the basic fact that the Calcutta Slums are a socio-economic entity and of the stern reality that replacement of the enormous shelter stock the slums harbour, by conventional housing stock is far beyond the means of the State in foresable future. It, therefore, prescribes two courses of intervention—one

for removal of the environmental deficiencies and the other for redevelopment of the slum areas.

ADEQUACY AND COMPATIBILITY OF INSTRUMENTS FOR EFFECTIVE INTERVENTION

Two basic questions, therefore, emerge:

- (i) Are the instruments for public intervention addressed to Calcutta slums adequate and compatible with the socio-cultural and economic fabric of these settlements?
- (ii) Have the schemes so far designed within the available framework for existing instruments been appropriately conceived or could they be conceived otherwise?

The test of any legislation lies in its demonstrated effectiveness. The effectiveness has to be judged against a set of criteria in a given situation. The criteria for evaluation are broadly visualized as follows:

- (a) scope and extent of application;
- (b) ease of application;
- (c) beneficiaries' perception of betterment;
- (d) acceptability of the form and/or product of intervention to the beneficiaries; and
- (e) replicability of the form of intervention on a massive scale.

Let us analyze the enactments in terms of the above criteria.

While under the Thika Tenancy Act, the institution of 'Thika' tenancy is sought to be perpetuated, the Calcutta Slum Clearance and Rehabilitation Act seeks to progressively liquidate it. The former acknowledges the positive role of the institution of 'Thika' tenancy in delivery and management of the large housing stock in the bustees in its present form, the latter envisages its gradual substitution by the State with higher physical standards of housing for the bustee dwellers, all at public expense. The West Bengal Slum Areas Act envisages intervention entirely at public expense for provision of basic amenities within the slum areas without disruption of the tenancy status, as a 'value' alternative; while the Calcutta Municipal Act seeks to achieve almost identical objectives not at public expense, but largely at the expense of the land-owners and hut-owners through regulatory and prescriptive devices. One of the inherent weaknesses of the instruments for direct public intervention and of the delivery systems evolved under them, is the element of cost recovery and its commensurability with the investments. By its latest amendment (of 1976), the Calcutta Municipal Act seeks to recover indirectly, a very small portion of the public expenses

incurred for environmental improvements (carried out under the provisions of the West Bengal Slum Area Act) by withdrawing the provision for reduced ceilings for consolidated rates in respect of improved bustees. A search for a common thread to weave through the enactments, should be associated with an appreciation of the basic realities.

These are :

- (a) stupendous nature and staggering dimensions of the problem—size of slum population, level of current deficiencies, very low incomes—tend to defy all solutions in physical terms alone;
- (b) illiteracy, low occupational skills, strong ethnic ties and lack of aspirations and enterprise contribute to low mobility and apathy to changes both in occupation and lifestyle;
- (c) the traditional role of Thika tenancy in the delivery and management of shelters for the poorest urban-dwellers is difficult to ignore and to be substituted by an appropriate State machinery within a short span of time;
- (d) resource constraints and employment scarce resources—minimum per capita resource use for a given coverage (quantitative rather than qualitative in the given situation), cost recovery potential and raising of resource potency—inhibit radical (or utopian) approaches;
- (e) speed at which perceptible benefits of intervention flow in the given situation (and social system) is of utmost importance in the context of accumulated ills and deficits caused by the neglect and inaction over several decades; and
- (f) in the process of transformation of slum community bound by traditional value systems not compatible with urban living, flexibility of the intervention model to allow for progressive development rather than instant development has a far reaching consequence on long term prospects for urban development.

Total liquidation of 'Thika' tenancy as an institution would be an anachronism. Thika tenants, though 'middlemen' in the delivery system, are neither 'affluent' nor they are 'exploiters' in the normal sense. They live with the Bharatia tenants and share the degrading environment with them. They have built up a rapport with their tenants through face to face informal communication and sharing of all that is good or bad in slum life over long years. In the process, they have acquired an expertise in supply of tenanted shelters to the poorest urban dwellers not available with the so called professionals in the field of housing. The State's capacity in both professional and financial terms to deal with an alternative delivery and management system of shelters for over a million people living in the city's classical slums and to take over the functions now performed by nearly

25,000 Thika tenants, within a foreseeable future would remain an open question. The vacuum created by instant liquidation of Thika tenancy can not be satisfactorily filled up by a State machinery or a new institution within a reasonable time. The main issue is, whether it is feasible and worthwhile to motivate and activize the Thika tenants and help them to organize better with State initiative not merely to protect their rights as conferred by the Thika Tenancy Act, but to emerge as an effective institution for delivery and management of improved shelters and services in the slums, as contemplated under the provisions of the Slum Areas Act and Calcutta Municipal Act. Incentives in the form of loans on liberal terms, free professional service, civic tax exemption for specified period on the value added, may be effected to the Thika tenants taking the role of a private developer regulated by guidelines, controls and improvement plans formulated by the State.

PHYSICAL DEVELOPMENT MODELS

Let us have a look at the improvement and/or development models so far conceived for the Calcutta slums. These can be grouped broadly under the following four:

- (a) rehousing outside but within proximity of slum areas (Clearance Model);
- (b) on-site Rehousing within redeveloped slum areas (Redevelopment Model);
- (c) resettlement in fringe and peripheral areas with 'Sites and Services' (Resettlement Model); and
- (d) on-site environmental Improvements (Sanitization Model).

Titles assigned to the models as shown in perenthesees are for purposes of convenience of reference and identification.

The 'Clearance Model' emerging as a form of public intervention under the Slum Clearance and Rehabilitation Act, has virtually failed to demonstrate its effectiveness at several locations. Moreover it has a social stigma attached to it—clearance of unsightly unwanted and septic concentrations of human miseries and deprivation to more absocure locations as if to keep them out of public view and condemned to segregation. It simply attempts to provide a conventional dwelling in lieu of a hut but the process of rehousing being not participatory is not conducive to human development even if it is said to be in public interest. The questions—which 'public' and what 'interest'—remain unanswered. Its relevance, if at all, lies only in making alternative accommodation available for slum families.

The 'Redevelopment Model' conceived as a form of public intervention under the Slum Areas Act is ahead of time: it keeps out of reckoning one

of the principal interest groups—the Thika tenants, it is costly and time-consuming and hence not replicable widely; it seeks to offer a permanent nature of solution not in tune with socio-economic and attitudinal status of the community at large; resulting in exorbitant affordability gap and large dose of subsidy and hence curbs the potency of scarce resources and pre-empts future options. The situation is, therefore, not ripe for an extensive use of this model. Its relevance lies in selective use at specific locations deserving special considerations.

The 'Resettlement Model' basically aims at providing at public expense low-priced, small serviced building lots with or without a core house and/or a sanitary core for being offered to the people in the lowest income brackets at a price and on payment terms their economic means can afford. This has been titled 'Sites and Services Approach' in UN documents and has been widely acclaimed by international development and funding agencies. Home ownership and public-aided self-help towards progressive development of dwelling are the basic tenets of this model. One of the principal determinants of viability of this model is the ultimate price tagged to the building lot with or without a core. The price factor and scale compel the location choice at the fringes and peripheries. The initial apparent advantage of low price cost of land at these locations is fully wiped off by high cost of reclamation, development and servicing of the land. In other words, the lowest economic price at which even the smallest size serviced building lot can be offered exceeds the affordability limit of the bottom one-third of the CMD households and more than four-fifth of the City's slum families. This affordability gap has either to be filled up by a system of subsidies meaning substantial erosion of resource generation potential of the project or exclusion of a large segment of the target group as 'economically untouchables'. So back to square one!. Universal acceptance of the resettlement model by the slum community of Calcutta would be considerably conditioned by its upward mobility in the socio-economic ladder. Fulfilment of this precondition calls for a different kind of inputs—delivery of social services, *e.g.*, health, nutrition, education, occupational training and enhanced economic opportunities. Till such time, the slum dwellers get themselves adequately equipped to start a new life in a new settlement, the resettlement model has little relevance for them. It is relevant in a different context for a growing metropolis like Calcutta to absorb new migrants with more enterprise and future growth of population, a major segment of which would be priced out of the inner city.

The 'Sanitization model' has the largest replicability and is currently being employed on a massive scale not only for Calcutta slums but on a national scale. It accepts the existing organization of huts, pathways, streets, etc., within the slum areas along with its traditional tenancy system, and seeks to remove the basic environmental deficiencies at a cost not exceeding Rs. 300 per capita on an average at current level of prices. The

basic objective is to preserve the slum housing stock with its century old private management system, in a sanitary environment at a cost which current resources would permit. It does not also pre-empt future options for other costlier interventions. Two of the major criticisms of this model are: (a) its scope is restricted to only removal of deficiencies in basic services and it does not seek to improve or upgrade the total environment of which the ill-lighted, ill-ventilated, crammed and damp hutments constitute an integral part, and (b) it does not envisage any direct cost recovery from the beneficiaries. The complex three-tier structure of land ownership, hut ownership and tenancy poses the limitations in the Calcutta situation. The West Bengal Slum Areas Act though confers powers on the public authorities to acquire the rights and interests in the land, huts and other structures comprised in the slum areas upon payment of compensation equivalent to 20-times and 5-times respectively the net annual incomes derived by the land owners and hut owners; the legal complexities of acquisition of such rights and interests in over 3000 slum areas of the city and its monetary and time implications rule out the choice at least during the initial stages of interventions. Not only the monetary implications of such large scale acquisition of rights and interests in respect of City's slums currently estimated at about Rs. 500 million are forbidding, but also the manner in which this urban land resource should be deployed upon being acquired is a vital question and has to be decided well in advance so as to avoid blocking of huge capital and possible pre-emption of options for the most socially desirable or efficient use of this land resource.

SEARCH FOR AN ALTERNATIVE—THE LOGICAL SUCCESSOR

In our search for an appropriate alternative model for public intervention in Calcutta slums, we have to bear in mind the incongruities of the other models and the lessons gained out of implementation and performance of the earlier ones. We have named the alternative, as 'Reorganization Model'. In some respects, it corresponds to what has been described elsewhere as 'Upgrading of slums'. We have preferred to call it 'reorganization' as it implies in Calcutta situation, a type of intervention and range of activities; much too different from those involved in physical upgrading. It provides a reasonable fit with the basic realities and can be the logical successor to the sanitization model. Basically, it seeks to alter in a limited way the existing organization of streets, pathways, huts, etc., within the slum with a view to securing a more orderly and rational system for the internal services to support and sustain the organic growth of a habitat with improved shelters in a specially desirable environment. The main instrument for intervention contemplated to secure the objectives is the Calcutta Municipal Act. Its provision requiring preparation of 'Standard Plans' for bustees by the Corporation of Calcutta is

proposed to be invoked. It has nevertheless to be enforced by a consultative mechanism supplemented by adequate inducements in the form of liberal financing, free professional services, civic tax concessions, etc., to secure consensus of all the parties to the action plan—the land owner, hut owner, Bharatia tenants and the public authority—and to their respective roles in the joint venture.

THE REORGANIZATION MODEL

The basic ingredients of the 'Reorganization Model' are:

- (a) Rights and interests in the land and huts not disturbed in order to enlist support of the concerned interest groups.
- (b) Streets and pathways realigned and reorganized with minimum dislocation and disruption to rationalize, to the extent possible in the initial stage, the internal service system and disposition of the hutments for improved ventilation and light as the 'Standard Plan' evolved in consultation and association with the community.
- (c) Improvement of huts (not necessarily to pucca standards) to admit natural air and light and to secure damp-proof and water-proof quality.
- (d) Raising of service levels for water supply, bath and latrine facilities, garbage collection and disposal and their total integration with the City systems.
- (e) Provision of a Community Centre for multi-purpose use and in particular for community interactions on formulation, implementation, supervision and management of reorganization plan.
- (f) Creation of open spaces and small play fields by an efficient use of the surplus land and/or derelict tanks and ponds, etc.
- (g) Settlement survey and updating records of rights in respect of land and holdings in relation to occupation and title deeds and delineation on an authenticated 'Survey Map'.
- (h) Acquisition of title and interests in surplus and vacant land as delineated on the 'Settlement Survey Map'.
- (i) Evolution of norms and criteria for conversion of huts or any part thereof into 'pucca structures' within the overall framework of the 'Standard Plan' and methodology for sanction of building plans by the Calcutta Corporation.
- (j) Adjustments in occupancy (on a modest scale with minor additions and alteration to hutments) to allow more space in relation to family size, identified and implemented under community supervision and leadership.
- (k) Apportionment of costs of on-site and off-site infrastructure and

remodelling of huts between hut owners, land owners and public authority and of returns on investments on the lines of the consensus reached between the participants.

- (l) Revision and rationalization of rent structure commensurate with investments and consistent with family earnings on the basis of criteria finalized with the consent of the community.
- (m) Reclamation, servicing and subdivision of surplus land for allotment of serviced building lots among the Thika tenants and Bharatia tenants opting for home ownership on liberalized mortgage and repayment terms.
- (n) Community-based Cooperative institution building and extensions of house building loans, mortgage facilities, technical advice and professional service, etc., through community cooperative societies.

The physical development envisaged under the reorganization model can not be pursued in isolation. It must have a complementary component, a socio-economic support programme for the community directed towards raising its productive power and economic status through delivery of 'software services'—health, education, nutrition and creation of larger avenues for more productive employment. Success of this model, therefore largely depends on how well the community is or can be activated and organized to emerge as a coherent and dynamic entity for purposeful interactions within and outside the community and to participate and associate meaningfully in the formulation and implementation of the reorganization Plan.

A SET OF CRITERIA AND RATIONALE FOR THE CHOICE

Let us now test the models against a set of criteria to judge their comparative relevance in a given situation.

The choice of the model for Calcutta situation is obvious. But who makes the choice? The professional's choice has a leaning towards 'once-for-all-hard and fast' solution and tends to skip over the initial stages in the transition of a socially and economically handicapped community. The community's choice, on the other hand, continues to be illusory, so long as it does not emerge as an organized and coherent entity to express its common will and to interact effectively with the interest groups in evolution of a development model which meets the essential criteria and view points of all interest groups. One of the essential prerequisites of a participatory development model is, therefore, development of human stock. This calls for the kind of inputs and employment of a delivery system appropriate for the situation. If the 'sanitization' model has to be the forerunner of all models, it has to be complemented by delivery of social services to make it mean-

Sl. No.	Criteria	Sanitization model	Clearance model	Redevelopment model	Resettlement model	Reorganization model
(1)	(2)	(3)	(4)	(5)	(6)	
1. Applicability	No interference with any interests. Very easily applicable on a large scale.	Acquisition of land delatory process. Restricted applicability.	Conflicts over acquisition of rights and interests in lands and huts inescapable. Inordinate delays. Restricted applicability.	Land acquisition and development delatory. But for initial delays applicable on a large scale.	Rights and interests in land and huts not materially affected. Dislocation and disruption restricted to minimum and with consent. Large Scale applicability possible. Prospects very high if undertaken with consent of interest groups involved.	
2. Acceptability	Very high for majority of slum dwellers.	Very low among the slum dwellers.	Long among the slum dwellers as also rent receiving interest groups.	Strong hesitency among majority of slum dwellers not adequately equipped to accept the challenge of a new life in an alien environment.		
3. Affordability	Cost per capita between Rs. 300 and Rs. 400. Hence affordable even for a universal coverage.	Per capita cost between Rs. 3000 and Rs. 3500. Not affordable on a large scale	Cost per capita range between Rs. 2500 and Rs. 3000 Affordable only for a selective coverage.	Cost ranges between Rs. 1200 and Rs. 1600 per capita. Affordable on a moderately large scale.	Cost range anticipated between Rs. 600 and Rs. 800 per capita. Affordable for massive coverage	

4. Cost recovery and resource potency	Direct cost recovery not contemplated. Indirect cost recovery through higher civic taxes.	Large subsidies pose a severe drain on resource potency.	High dose of subsidy restricts resource generation and erodes resource potency.	Amortizable only with internal cross-subsidies, possible only if conceived as a composite project with mixed land use. Objective of targets diluted. Resource generation restricted.	Cost shared between land owner, hut owner and public authority. Investments sought to be amortized through increased rents and under charges. Resource potency enhanced.
5. Flexibility	Land use not pre-empted by construction. Highly flexible and future option open for progressive development.	Land use sealed. Shelters permanent. Future options pre-empted. Inflexible and rigid.	Land use sealed. Shelters permanent. Future options pre-empted. Inflexible and rigid.	Land use predetermined but shelters flexible. Self-help plays a major role for progressive development.	No major alternations in land use, only marginal realignments of internal system envisaged. Flexibility not affected even by these changes and shelter improvement. Future option open for progressive development.
6. Compatibility	Prompt accrual of benefits. Housing stock conserved. Minimum resource use for given	Delivery dilatory. Incompatible with means, values, attitudes, resource dimensions and urgency of the pro-	Not responsive to community values and attitudes. Ignores stages of development. Resource use incompatible to affordability	Incompatible with the mobility status and mental and physical equipments of majority of slum communities. Gestation period	Logical extension to sanitization model. Community better equipped and organized for meaningful participation and

(Continued)

(1)	(2)	(3)	(4)	(5)	(6)
	coverage. Community organized, ground work prepared for next stage of development.	blem. Not amenable to community involvement and participation.	and size of the problem. Delivery dilatory, benefits take long time to accrue. Community involvement and participation restricted.	quite long. Community involvement and participation illusory for large and distant projects.	interaction on joint venture. Consistent with means, lifestyle, stage of socio-economic transformation. Minimum resource use for a higher level of satisfaction of a given coverage. Large scale.
7. Replicability	Universal.	Very limited.	Restricted	Limited	

ingful and to equip the community, organizationally and intellectually to receive development models of higher order to follow. While the delivery of the 'hardware' component, e.g., the physical services can be handled by the public works organs of the state, the organizational adequacy and effectiveness of public agencies to deliver the 'software' components, e.g., the social services on a scale warranted is open to question. This is an area where the voluntary social service organizations can play a crucial role. They could either be assigned or apportion among themselves functions and/or geographical areas to operate against set targets both qualitative and quantitative.

SECURITY OF TENURE AND COST RECOVERY

The reorganization model, we have advocated for Calcutta slums, may *prima facie* appear to have one weakness. It does not postulate ownership and security of tenure for the beneficiaries to the extent it should aim at. It helps identification of families in relation to marketable benefits and rationalization of affordable standards and direct cost recoveries and consequently raises efficiency of project planning and resource use. But the physical and socio-economic constraints in Calcutta slums restrict such identification and application of techniques of a cost recovery as applied to a conventional housing or to a sites and services project. Firstly, the physical form and shelter layout in Calcutta slums are not amenable to demarcation of individual plots, without, of course, large scale dislocation and disruption of occupants and total expropriation.

Land prepared and serviced out of ditches and ponds within the bustees offers only limited scope for carrying out individual building lots without disruption and interference.

Secondly, the current average gross earning of a Thika tenant out of hutments he owns in a bustee is about Rs. 2,800 per annum. The net earning after paying the land rent and deducting cost of collection, maintenance and repairs, etc., stand at about Rs. 2,500 per annum. Under the Slum Areas Act he would be entitled to receive a compensation amounting to Rs. 12,500 in lieu of his rights and interests in the huts if acquired. With this compensation, he could derive a net earning of about Rs. 1,500 per annum at current bank rates. Cases are not infrequent where the rent earnings from hutments are the only means of eking out a living for the Thika tenants.

Thirdly, about two-thirds of the bustee families earn below Rs. 100 per month and 85 per cent below Rs. 150 per month. The utmost they can afford as housing expense is Rs. 15-20 per month. The average price tag for a serviced plot within a recognized bustee would be around Rs. 5,000 and even a payment of Rs. 480 per annum can not buy it over 20 years at an interest rate as low as 3 per cent per annum. The price of a

serviced plot with sanitary core but without land cost may be in the region of Rs. 3,000. This can be offered on a 20 year transferrable lease convertible at the option of the beneficiary to a freehold title upon repayment of the additional costs of land acquisition and preparation. This would marginally raise the ownership affordability—a payment of Rs. 420 per annum for 20 years at the rate of 12 per cent interest per annum would secure a lease-hold right to the serviced lot. Thus, the concept of individual home ownership and security of tenure for the bustee dwellers, would remain confined to the families above the 20th percentile; and the rest are clearly priced out.

This would not obviously necessitate a sweeping acquisition of rights and interests in land and huts of the entire bustee but about a fourth of it—a compromise of economic co-existence, most likely to be acceptable to all interest groups. The remaining three-fourths would be retained by the Thika tenants and land owners as rent-receiving interests for being improved in accordance with the reorganization plan and occupied by the families below the 20th percentile on rental terms. The reorganization model is based on the philosophy of cost sharing rather than recovery. The broad guiding principles for sharing of cost may be as follows:

- (a) All promotional costs, off site infrastructure costs and costs on account of creation of facilities for open spaces, play fields, etc., would be borne by the public authorities,
- (b) All costs of on-site infrastructure facilities including realignment of streets, pathways etc. and shelter improvements (for renter families) would be borne by the rent-receiving interests, *viz.*, the land owners and hut owners more or less in the same proportion as the respective rent accruals to them bear.
- (c) All costs of acquisition, development and servicing of land related to the home ownership component would be initially funded by the public authority but will be realized from the beneficiaries in instalments over 20 years at the rate of 12 per cent interest per annum.
- (d) All costs of socio-economic support services including creation of fixed assets like community centres, primary schools, craft centres, health and nutrition centres, etc., and financing of Small Scale Enterprises (SSE) units will be borne by the public authorities (in association with voluntary organizations and nationalized Banks).

Land owners have only lukewarm interest in their bustee lands. They are more interested in securing a reasonable compensation. The relevant Act provides for payment of land compensation at 20 times the net annual income, which works out to a very meagre amount in comparison to the market value. Acquisition of rights of the landowner in lieu of such paltry

amount of compensation will be resisted even to the extent of invoking intervention by courts.

COST-SHARING AND INCENTIVES

Initial hesitancy and even resistance of the rent-receiving interests to invest in bustee lands and huts is understandable. This will have to be overcome by a system of incentives. Besides civic tax relief over a period of 5 years on the added values of land and shelters, the investments apportioned to them under the reorganization plan may be advanced to them as a loan at low rate of interest, say 6 per cent per annum repayable over 20 years on the express condition that the additional rent accruals shall not exceed the amount required to recover such improvement investment allocated to different rent earning shelters at a rate not steeper than 6 per cent per annum over 15 years. This would nevertheless require matching amendments to the C.M. Act and the Thika Tenancy Act respectively to regulate civic tax reliefs and to do away with the restrictions on revision of rent structure.

SUPPORTIVE ROLE AND OPERATIONS, ORGANIZATIONAL COMPLEXITIES AND PROSPECTS

The ultimate objective is to eliminate 'centralized bureaucracy' in management of loan finance assistance and mortgage facilities to the rent-receivd interests as also the Bharatia tenants seeking ownership. These management functions should progressively be taken over by the community itself when it has organized sufficiently to set up its own community-based cooperative institutions, Land Mortgage Banks, Housing Finance and Management Societies, Building materials and House construction societies, etc. The role of the public Authorities will be confined to only that of a 'catalyst' and a 'pathfinder'.

The operations involved can be broadly grouped under three streams:

- (a) Legal-administrative-fiscal support
- (b) Socio-economic support, and
- (c) Physical services support.

Steps to be taken in sequence under the three streams are outlined below:

Accomplishment of the tasks envisioned no doubt poses a formidable challenge. This can only be met by a management system with an organizational framework especially suited to the purpose. Some of the basic requirements of the bustee reorganization model are to be met by the traditional Government agencies while some others are covered by the

<i>Legal, Administrative, Fiscal Support Stream</i>	<i>Socio-economic Support Stream</i>	<i>Physical Services Support Stream</i>
<ol style="list-style-type: none"> 1. Amend enactments and/or initiate appropriate legislation to provide required statutory support. 2. Secure support of statutory agencies involved. 3. Register all bustees irrespective of size and tenancy status, conduct settlement surveys and publish authenticated settlement maps. 4. Introduce structural changes in Organization to provide organizational support. 5. Establish machinery for institutional and mortgage financing support. 6. Streamline rules and procedures to suit accelerated performance. 	<ol style="list-style-type: none"> 1. Identify bustees or a group of bustees. 2. Conduct socio-economic surveys to establish 'bench marks'. 3. Activate community and help organize itself and make its own planning decisions and manage its own affairs. 4. Prepare socio-economic support plan, interact with community and secure its consent in the most acceptable forms. 5. Motivate and guide community to set up cooperative institutions. 6. Prepare formal Project Report quantifying among others, space, 	<ol style="list-style-type: none"> 1. Conduct topographical and civic infrastructure status surveys in identified bustees and prepare 'base maps' to show details on an appropriate scale. 2. Prepare first Draft outline of 'standard Plan' with indication of contemplated changes in existing physical structure in consultation with the community organization. 3. Interact with various interest groups and record comments and reactions. 4. Present Draft reorganization plan with fiscal frame and tentative indication of cost allocations and return. Interact groups and record comments and reactions. 5. Prepare alternative plans for physical inputs, cost allocations and capital recovery, for the community to make final choice and interact with community organization and interest groups. 6. Present final reorganization plan in its most acceptable form dovetailed with

	infrastructure, manpower and resource needs including anticipated outputs over a time frame.	socio-economic support plan and secure consensus of the community.
7. Provide fiscal and budgetary support.	7. Liaison with other service agencies and synchronize delivery of socio-economic inputs with delivery of physical services.	7. Set out programme targets and take for participants and ensure tie-up with institutional finance and service supports.
8. Establish prompt information flow monitoring and coordinating device.	—	8. Secure administrative and financial clearance and start implementation.
9. Install performance evaluation system in relation to predetermined targets in qualitative and quantitative terms and in relation to resource use and delivery time.	—	—
10. Modify and/or alter the development model on the basis of feedback to suit universal coverage.	—	—

statutory functions of the Calcutta Corporation with or without approval of the State Government. CMDA, on the other hand has already established a large organizational network to overhaul augment the core metropolitan infrastructure and to secure a sanitary environment for the poorest urban dwellers in bustee; and further to make planned provisions for future urban growth in the CMDA. Some other functional areas hitherto left to the individual or group initiatives for providing social service support require to be integrated and meshed into the overall organization frame.

In the ultimate analysis, success of the bustee reorganization model will largely depend on how best the management system with its organizational framework secures the operational reliability of its multiple linkages, generates information flows and monitors performance, coordinates and regulates activity sequences, responds to situational realities and streamlines the decision making process commensurate with accountability.

And what are the prospects? The prospects hinges on appreciation of the basic realities, unqualified acceptance of the philosophy of compromised coexistence of interest groups, continuous efforts for a consensus of the interest groups on the development model chosen through education, dialogue, persuasion and mutual understanding and finally evolving a responsive management system to take care of the organizational complexities. Given the determination and dedication of the organization constituents and a strong political will and backing, there is no reason to feel diffident about the prospects of the grand participatory endeavour. The environmental improvement programme (the 'sanitization model') now well under way in Calcutta slums has prepared the groundwork and established credibility.



Relocation in Delhi

GIRISH K. MISRA

THE URBAN system in an economy responds almost continuously to the processes of changes operating in the larger economy. The dynamics of development not only affect the size of the urban base or the rural-urban interaction mechanism but also the internal structure of the urban centres. The land-use pattern within the urban centres and the spatial distribution of the residential localities, etc., keep changing within the pressures exerted through the market mechanism and the developmental strategies followed by the Government. It is, therefore, evident that no city grows in a completely planned fashion. It keeps on reallocating land for different uses and in this process sometimes the residential colonies are shifted from one place to another. It has been argued that the changes within the urban system is necessary and is integral part of urban development. No serious attempt, however, is made to analyze the impact of such changes on the different sectors of urban population or to look into the vested interests that may be playing an important role in this process.

A great majority of immigrants into cities are from rural areas who come to improve their lot and seek entry into the organized labour force. Upon their arrival in the city they first settle near the factory on some vacant public or private land. Slowly the land values go on mounting up with the passage of time. At a juncture when values are considerably high, the use of land for different purposes is felt. It may be for the establishment of an industrial area or purely for housing elite section of population. As long as full-time and part-time employment is being created in the manufacturing and tertiary activities in big cities, flow of population into their already congested environment would never be lessened. Just for stopping their immigration, no city government would like the idea to stop development of these activities. Also no legal measures can be adopted by the government to stop their immigration.

One is, therefore, left with only two choices to combat the problem of squatter settlements: (i) either to shift them to far-flung areas of a city, (ii) or to create housing facilities near the core of the city. The latter is quite an unrealistic proposition unless land is available in plenty where a system can easily be designed to absorb these immigrants. Available land

is either meant for more important land-uses other than housing the urban poor or its value is so high that it cannot be subsidized to the extent of making it available for this economically weaker section of population who cannot afford low-income group housing otherwise.

Metropolitan Delhi saw significant relocation of residential and other colonies particularly during the National Emergency period when a gigantic task to relocate 1.5 lakh squatter families was undertaken within a period of 18 months. Before the emergency period also about 53 thousand squatter families were relocated in Jhuggi-Jhompri colonies. It would be interesting to analyze the basic motivations for such changes, its impact on the different sections of urban population and also its impact on the overall developmental activities and the urban economy as such.

OBJECTIVES

The present paper examines issues related to the shifting of people at the outskirts of Urban Delhi. It studies various re-settlement policies that were adopted during different relocation drives. The study compares the living conditions of people before and after coming to the new resettlement colonies that were established during the emergency period.

A comparison is also made between old (*i.e.*, established before the emergency) and new (*i.e.*, established during the emergency) re-settlement colonies. While making these comparisons, an attempt has been made to examine whether the resettlement policies adopted from time-to-time to shift people have really improved living conditions of poor masses or they are still the same or worse than what they were before shifting to these new sites. Next, the study would probe into the possibilities for short-term and long-term measures to improve the living conditions in resettlement colonies and raise certain issues that would perhaps enable the government to formulate more realistic re-settlement policies in future. This paper, in fact, is based on a study* conducted by the IIPA's Centre for Urban Studies.

HYPOTHESES

The problem of re-settler's accessibility to various services and amenities under different sets of environment, *i.e.*: (i) old and new re-settlement colonies, and (ii) resettlers established during emergency and their living conditions before coming to these colonies, was examined based on certain hypotheses.

The question of availability of a service or amenity was examined in

*Misra, Girish K. and Gupta, Rakesh, *Re-settlement Policies in Urban Delhi* (cyclo-styled), Indian Institute of Public Administration, New Delhi, 1979.

a variety of ways. In case of public transport, the accessibility was noticed in terms of: (i) distance of the place of employment, (ii) time spent for going to the place of employment, (iii) expenditure incurred on transport, and (iv) perception of respondents about regularity of the service.

The availability of water supply was examined in terms of: (i) distance from the public stand post, and (ii) perception about the adequacy of supply as reported by the respondents.

As for sewerage, its accessibility was mainly examined in terms of its distance from respondent's house. As regards health, its availability was subject to the distance from a clinic or dispensary. Distance was again a measure for examining the availability of market, education and post and telegraph facilities. No such measure was, however, adopted in the case of recreation facility except knowing about its availability directly whereas the availability of electricity could not be examined in any way due to the absence of domestic connections in new resettlement colonies.

DESIGN OF THE STUDY

In pursuance of the general framework of the study, a three-stage sample was used for the selection of households. The first stage sample comprised of the selection of a modest number of eight re-settlement colonies out of a total of 34 such colonies in Delhi. Four localities were selected out of 18 colonies established before the emergency period and another four were selected out of 16 re-settlement colonies established during the emergency period. These colonies were selected at random according to their population size.

At the second stage of sampling a random selection of about one-fifth the number of blocks from each of the selected resettlement colonies for purposes of census enumeration and preparation of up-to-date household list was made. This was mainly done through door-to-door enumeration in smaller localities whereas in case of larger re-settlement colonies, list of households were collected from rations hops. These were made up-to-date through 5 per cent door-to-door random verification.

At the third stage, a sample of 10 per cent households was drawn at random from the list of households that were prepared in respect of each of the re-settlement colonies selected at the second stage of sampling. They were then rounded-off to the nearest multiple of 5.

DATA COLLECTION

With the help of a pre-structured interview schedule, data relating to the following heads were collected: (i) socio-economic background of respondents, (ii) the availability of selected 10 services and amenities to a household, (iii) the views of respondents on the mode of shifting adopted, and

(iv) suggestions to improve the social and economic conditions in re-settlement colonies. Through another interview schedule, the views of officials and people's representatives were sought on various policy matters.

To supplement the above, the data were collected on: (i) plans of NOIDA, and (ii) organization and management of Slum and J.J. Department. No data could be collected regarding short-term and long-term re-settlement programmes in their absence.

RE-SETTLEMENT POLICIES

A brief account of re-settlement policies adopted from time to time is essential before analyzing the field results and raising issues in the formulation of future re-settlement strategies. In this context, the Master Plan of Delhi suggested a general policy frame for the solution of the problem of squatters by linking it with the restructuring of urban environment in a way that would equalize the living conditions and community facilities between different areas and socio-economic groups including the squatters.¹ However, the Plan did not elaborate the sites to be utilized for relocation purposes in future. Of course, the Interim General Plan² for Delhi had suggested to rehouse the slum dwellers as near as possible to their existing work centres or to create new work centres near the proposed re-housing areas. The Draft Master Plan³ even suggested to issue directives to all colonisers and also the government departments engaged in building activities to reserve 25 per cent of the new housing for the rehabilitation of slum dwellers. The implementation aspect of relocation is totally covered by J.J. Removal Scheme which was initiated in 1960. Initially the scheme envisaged to allot 80 sq. yd. developed plots possessing latrine, a water tap and a platform to each squatter family on a lease of 99 years.

A special census was conducted in 1960 and those covered were issued a slip which entitled them to be 'eligible' squatters. They were allotted a plot of 80 sq. yd. whereas those squatted subsequently were dispersed and were not given alternative sites. But this encouraged 'benami' sales. As a result, the scheme was revised in 1962 and the element of ownership was dispensed with.

As the eligibles and ineligibles got mixed up, the scheme was again revised in 1964. All the squatters were given a plot of 25 sq. yds. only.⁴ The

¹For details see, Delhi Development Authority (DDA), *Work Studies Relating to the Preparation of the Master Plan for Delhi*, Vol. I (bears no date), p. 233.

²Town Planning Organization, *Interim General Plan for Greater Delhi*, 1956, pp. 52-53.

³Delhi Development Authority, *Draft Master Plan for Delhi*, Vol. I, p. 112.

⁴For a detailed account of various changes made in the J.J. Removal Scheme see: (i) Town and Country Planning Organisation, *Jhuggi-Jhopri Settlements in Delhi: A Sociological Study of Low Income Migrant Communities*, Part II, Ministry of Works (Continued on p. 65)

ineligibles (post 1960 squatters) were to be penalized by resettling them in far off localities and at full rent. The Union Ministry of Works and Housing then appointed a Study Group in 1967 to review the scheme. On the recommendations of the Study Group, the government stopped the construction of tenements and also the allotment of 80 sq. yd. plot even to the eligibles. No allotment of plot was favoured in the case of ineligible although it was recommended to remove them at the outskirts of Delhi. Accordingly, the government decided to remove the post 1960 squatters on the peripheries.

ANALYSIS OF FIELD RESULTS

It is observed that the availability of facilities in general is better in old re-settlement colonies as compared to new ones. Also a comparison between the opinion of re-settlers about the availability of different facilities before and after shifting to new re-settlement colonies reveals that dwellers in squatter settlements were more satisfied with the available living conditions than resettlers in new colonies. These observations are dealt with in this section to make such comparison more pin-pointing.

OLD AND NEW SETTLEMENT COLONIES

The average distance of respondents' place of employment from their residence works out to 4.86 km in old colonies as compared to 11.80 km in new ones. The average time spent for going to the place of employment stands as 25.31 and 64.06 minutes for the old and new colonies respectively. As such, the average (monthly) amount spent in the old colonies (Rs. 15.46) is less than half as compared to that in the new colonies (Rs. 32.21). On the other hand, percentage of respondents considering the bus service as always, mostly or fairly regular is comparatively more in new colonies than the old ones. Hence, we can say that the situation in new re-settlement colonies is better than in older ones in terms of the regularity of bus service but is worse in terms of distance, time and amount spent on travel.

As regards the availability of water supply, the average distance of public stand post from the residence of respondents in old colonies comes out to 39.76 metres which is quite less as compared to the new colonies where it comes to 71.69 metres. In new colonies only 3.17 per cent of the

(Continued from p. 64)

and Housing, Government of India, New Delhi, April 1973; (ii) Delhi Development Authority, "Re-settlement Colonies, Review of the Problems" (Mimeographed), June, 1977; (iii) Girish K. Misra and Rakesh Gupta, *op. cit.*, pp. 21-31, and (iv) Gangadhar Jha 'Relocation of Squatters in Delhi: Quest for a Policy', paper presented to a Seminar on *Control of Urban Building Activities* (March 20-21, 1978), Indian Institute of Public Administration, New Delhi.

respondents consider the water supply from public stand posts (as generally no body is having municipal water connection in their portions) to be adequate as compared to 9.09 per cent from the old colonies. The perception of respondents regarding adequacy of water supply through public stand posts seems to be very critical as more than 50 per cent respondents from both old and new colonies consider the present supply highly inadequate.

The position of old resettlement colonies seems better in terms of the availability of services regarding public latrines, medical dispensaries, markets and recreation as compared to the new re-settlement colonies. However, only in the case of the post and telegraph office, the position of new colonies seems to be better. The statistical tests also confirm that these differences are quite significant except in the case of the distance of public latrines from respondents' residence. As the new resettlement colonies are deprived of the domestic electricity connection, it is not possible to compare the availability conditions of electricity supply.

To get an overall picture of comparison between the old and new colonies, we constructed a composite index based on the selected ten indicators excluding the variables like amount spent and distance covered while travelling in buses as these are highly multi-collinear with the time spent on journey. On the basis of the value or percentage figure of each of these indicators, we ranked the eight selected re-settlement colonies (Table 1). While doing so, we gave an inverse ranking in the case of negative indicators which were given a lower rank. Finally, all these values were aggregated to obtain the overall composite index on the basis of which the final ranking of the re-settlement colonies were determined.

It is observed that all the old colonies occupy high position in terms of the composite rank value as shown in Table 1. This implies that the socio-economic conditions in these colonies are better than new colonies in terms of the availability of services. The average monthly (family) income of households in old colonies is higher than new ones, while it does not vary significantly in terms of average (per capita) monthly income of respondent's family. This shows that family income between old and new colonies has been affected more in former case and the rate of dependency is lower in the new colonies.

The above analysis has revealed the difference in living conditions between old and new re-settlement colonies very sharply. What quantitative and qualitative measures should be adopted to remove such a difference is the prime concern of the government. Such a difference obviously exhibits lack of social and spatial considerations in the relocation policies.

BEFORE AND AFTER SHIFTING TO RE-SETTLEMENT COLONIES

The average distance to reach the place of employment while dwelling

TABLE 1 SELECTED INDICATORS OF SERVICES FOR THE RESIDENT HOUSEHOLDS OF NEW AND OLD RE-SETTLEMENT COLONIES

Sl. Name of Re- No. settlement Colony	Avera- ge time spent on journey by res- pondents (in min.)	Respon- dents who con- sider the bus ser- vice as regular (percen- tage)	Average distance of house- holds from public stand posts (in metres)	Average distance of house- holds from Public latrines (in metres)	Average distance of house- hold from Medical dispen- sary (in km)	Average number of school going children post and telegra- ph office available (in km)	Average distance of house- holds which parks and playgro- unds are (in km)	Average distance of house- holds from market (in km)	Total score	Com- posite rank- ing			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
OLD													
1. Seelampur	28.15	15.00	45.05	0.00	52.50	0.169	2.13	0.615	40.00	0.430	49.0	IV	
2. Wazirpur	21.55	30.00	43.24	6.00	52.50	0.220	1.45	2.663	85.00	0.855	50.3	III	
3. Pandu Nagar	35.00	20.00	30.00	40.00	30.00	0.000	3.67	1.350	100.00	2.000	63.0	II	
4. Tigri	22.30	20.00	30.00	20.00	167.20	0.000	2.25	1.125	100.00	0.345	64.0	I	
Old Re-settle- ment Colonies	25.31	21.81	39.76	9.09	76.56	0.205	2.08	1.519	72.73	0.712			
NEW													
5. Khyala Complex	49.23	0.00	36.00	0.00	300.43	0.263	1.14	2.100	66.67	2.083	26.5	VIII	

Continued

in squatter settlements works out to 3.4 km while the present distance in the re-settlement colonies is more than three times that figure (11.80 km). The variation in the average time spent on journey too is of similar order. So is the case with the amount spent on journey. The average monthly expenditure on transport was only Rs. 9.22 as compared to Rs. 32.21 now spent by respondent in new re-settlement colonies. Obviously, the respondents' perception about the regularity of bus before and after coming to the new resettlement colonies differs to a great extent. While dwelling in squatter settlement, 62.23 per cent stated that the bus service was regular; whereas now residing in resettlement colonies only 37.14 per cent considered it to be regular.

The availability of water supply was considered to be adequate by 10 (3.17 per cent) respondents out of 315 in the new re-settlement colonies. Out of the same number of respondents, the supply has been considered as adequate by 66 (20.95 per cent) cases when they were dwelling in squatter settlements.

The average distance of households from public latrines is 88.96 metres in new resettlement colonies. At the time of dwelling in squatter settlements it was 72.02 metres.

As regards the average distance of households from medical dispensary, the position in squatter settlements was better. This was also the case in connection with distance from post and telegraph offices and market places. The perception of respondents about recreation facilities differs alike.

As far as the availability of housing facility is concerned, about two-third of the cases had more than 25 sq. yd. plot area in the squatter settlements. Also, the same proportion of cases have considered the present accommodation either, more or less, the same or worse than what they possessed in squatter settlements.

To examine the overall availability of socio-economic services to people before and after their coming to new resettlement colonies, we have made an attempt to work out a composite index by aggregating the various components as has been done for the old and the new re-settlement colonies. The indicators chosen are: (i) average time spent on journey, (ii) regularity of bus service, (iii) adequacy of water supply, (iv) average distance from public latrine, (v) average distance from medical dispensary, (vi) average distance from post and telegraph office, (vii) availability of park and play ground, and (viii) distance from market. It is seen that the condition of resettlers while dwelling in squatter settlements was better as they occupy high position according to the composite ranking (Table 2).

On the other hand, the average monthly-income of respondents and their families has gone down after shifting to the new re-settlement colonies. Out of 315 respondents in new re-settlement colonies, 119 (37.78 per cent) desire to go back to the old sites. Out of them 21

TABLE 2 SELECTED INDICATORS OF AVAILABILITY OF SERVICES FOR THE RESIDENT HOUSEHOLDS OF THE NEW RESETTLEMENT COLONIES BEFORE AND AFTER THEY CAME TO THESE COLONIES

Name of the re-settlement colony	Average time spent on journey (in minutes)	Respondents who consider bus service as regular (percentage)	Respondents who consider water supply inadequate (percentage)	Average distance of house-holds from public latrines (in metres)	Average distance of house-holds from medical post (in km)	Average distance of house-holds from dispensary telegraph offices (in km)	Average distance of house-park and playgrounds are available from market (in km.)	House-holds for whom distance score	Total score	Composite ranking
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Conditions of the squatter dwellers before they moved into the new resettlement colonies										
Khyala Complex	16.40	60.00	46.67	30.00	0.628	0.360	33.33	0.360	50.0	I
Nand Nagri	21.22	48.00	10.00	55.47	0.383	0.585	48.00	0.535	45.5	II
Mangol Puri	17.23	48.00	32.80	95.27	0.421	0.634	72.00	0.797	42.5	IV
Patpar Ganj Complex	30.20	68.00	9.60	43.50	0.385	0.698	56.80	0.741	35.0	III
	22.97	62.23	20.95	72.02	0.410	0.639	60.32	0.712		
Conditions after they moved in the new re-settlement colonies										
Khyala Complex	49.23	0.00	0.00	0.00	0.263	2.100	66.67	2.083	30.0	V
Nand Nagri	62.02	44.00	2.00	59.15	0.686	1.329	90.00	1.187	24.0	VII
Mangol Puri	58.71	57.60	3.20	106.95	0.538	0.714	96.00	4.234	29.0	VI
Patpar Ganj Complex	72.00	18.40	4.00	57.51	0.471	1.432	16.80	0.954	22.0	VIII
	64.06	37.14	3.17	88.96	0.538	1.162	62.22	2.347		

(17.65 per cent) want to go back mainly because their housewives could serve household chores in nearby colonies. At present, in new re-settlement colonies, 14 cases are such where housewives are also earning members in their family. Assuming that these 14 cases also had jobs in squatter settlements, it seems that there has been a considerable down fall in the job opportunities for women folk. Thus, it is not only from the angle of the availability of facilities but also from the level of income that the situation in new re-settlement colonies is worse than what it was in squatter settlements before coming to these new sites.

The major reason for poor availability of services in re-settlement colonies seems to be their remoteness from the heart of the city. It is because of this reason that the distance, time and amount spent, etc., have increased for going to the place of employment. The women folk are also deprived of opportunities to serve the household chores in nearby residential areas. On the other hand, while dwelling in squatter settlements, the distance, time and amount was considerably low due to the proximity of these settlements to work places.

The supply of water was also better in squatter settlements as there were opportunities for these dwellers to draw filtered water not only from neighbour's house, but also from the existing municipal public hydrants which are not available in new re-settlement colonies at present. As for the supply of domestic connections of electricity, they have not yet reached to new resettlement colonies.

The same pattern of services is, more or less, found in new re-settlement colonies. From the analysis of the availability of public transport, old re-settlement colonies are located comparatively at a lesser distance from the core of the city as compared to new re-settlement colonies. If the views of residents on the availability of services in squatter settlements can be taken as representative of the entire squatter settlement, we can say that living condition in old re-settlement colonies is also not better than squatter settlements.

The difference between the living conditions in re-settlement colonies and squatter settlements has really brought out a very dismal picture of relocation drive. Why such an effort was needed when it did not even succeed in providing a better living environment to the resettlers than what they had in the squatter settlements? This is a question which reflects the futility of relocation policies.

VIEWS OF OFFICIALS AND PEOPLE'S REPRESENTATIVES

With the help of an interview schedule we recorded the views of selected officials and people's representatives on various aspects of re-settlement policies. We have not only tried to understand the causes of low level of social and economic attainments of residents in old and new re-settle-

ment colonies but also recorded their suggestions for raising their living standards in future. What changes in resettlement policies are required for making J.J. Removal scheme a success in future so that while shifting the squatters, dragging and bulldozing could be avoided and their cooperation could be solicited.

The views of officials and people's representatives have been analyzed in terms of: (i) the mode of shifting, (ii) provision of services and amenities, (iii) creation of job opportunities, and (iv) re-settlement policies.

Mode of Shifting

An attempt has been made here to analyze the responses of different sections of people regarding the *modus operandi* adopted by the government while shifting squatter families to re-settlement colonies. According to the resettlers in almost all the selected colonies, this practice was not followed particularly during the emergency period. According to officials, an attempt was made to put the relatives, as far as possible, in the same colony and that too on adjacent plots. On the other hand, the people's representatives support the opinion of resettlers that no such special effort was made by the government. It was only a matter of chance in some cases that relatives and friends were shifted together.

According to the resettlers, their consent was not taken regarding their choice of a re-settlement colony. This did not allow them to choose a colony that was nearest to their place of employment. Officials also endorse this view as they did not consider it necessary to take consent of squatters because nobody wanted to leave the squatter settlements willingly. Moreover, the government adopted the policy to shift people when the colony was not fully developed. People's representatives also hold similar views in this regard.

It is understood from the resettlers that no dislocation allowance was provided by the government while shifting them from squatter settlements. This fact was accepted by the officials except that they claim to provide vehicles for shifting them with their luggage. But according to people's representatives, this practice was not followed, uniformly.

The reason stated by the officials for locating the re-settlement colonies on the periphery of the city was the non-availability of appropriate sites within the city area. Land prices are also very high where such type of welfare schemes cannot be carried out due to their uneconomic nature. On the other hand, the land at the outskirts of city was available comparatively at cheaper rate and, thus, in the absence of any reasonable possibility of rehabilitation within the city area itself, squatter dwellers were shifted to such remote areas.

Provision of Services and Amenities

The provision of housing facility was always in the forefront in a

re-settlement programme. The construction of a house on a given plot was the responsibility of a re-settler. However, the government arranged loan for the purpose from the State Bank of India. Only a 'no objection certificate' was required by the Bank from the Slum Department to release the loan to a resettler. When asked why the construction work was not carried out by the Delhi Development Authority (DDA), the reasons given by the officials were the shortage of funds and time. Moreover, this was not considered to be a part of the overall re-settlement plan.

The officials of Slum Department and DDA hold that houses in re-settlement colonies should not be constructed according to the various income-levels but on requirement basis. In fact, squatters were living in Jhuggies and it was understood that they belonged to the same income group. Therefore, any discrimination in the construction of housing would have proved to be meaningless. However, in the beginning, the Slum Department thought of a composite scheme where both the squatter dwellers as well as higher section of population can be put together. But this proposal was turned down by the Ministry of Works and Housing. In the case of a composite colony, the plan was to utilize 50 per cent of the land of each colony to house better class people; the remaining 50 per cent was to be left for housing the economically weaker sections. Both the housing were to be separated by parks and wood lands. In this scheme, one of the advantage was the availability of persons for domestic services, etc., for better class people and *vice-versa*. This interdependence would have been to the mutual economic advantage of all sections of the communities.

According to the re-settlers, the present accommodation is not enough for them particularly when their size of family is large. People's representatives also hold the same view about the size of accommodation and have suggested to increase the plinth area from 25 sq. yds. to 40 sq. yds. But according to the officials, the provision of more plinth area for the construction of a house in a re-settlement colonies was not possible. The matter is yet to be decided by the Ministry. However, the officials hold that the plinth area of 25 sq. yds. is good enough provided they can go for the construction of first floor.

It is stated by the people's representatives that all the services and amenities that were proposed to be given to the re-settlement colonies were not actually provided. Officials also accept this fact in the case of sewerage facility where the main trunk line is yet to be laid by the Municipal Corporation of Delhi. The poor condition of potable water supply in these colonies is the main concern of the people's representatives who want immediate steps to be taken for its provision. Officials show their inability to do it mainly due to: (i) distance of the colony from the control point, and (ii) involvement of huge initial investment in its provision. For the time being they consider the provision of tube wells as the only feasible solution to the problem of water supply in these colonies.

According to people's representatives, the supply of electricity is another deficiency in the re-settlement colonies. Although street lighting has been provided but according to officials, there is no provision for the electricity connections in the scheme. Domestic connections have not yet reached these localities but, the proposal is still under consideration. The availability of public transport is also not up to the mark according to the people's representatives. Defending the side of government, officials have stated it to be due to the sudden shifting of about 7 lakh people to these newly developed re-settlement colonies. Hence it became difficult to provide public transport to meet the requirements of these colonies fully. Had the demand been rising gradually it would have been easier for the Delhi Transport Corporation to fulfil it. The Chairman, DTC, has already assured to increase the number of fleet to these colonies. At present they are given but not up to a desired standard. Hence, long queues are common sites in these colonies.

Job Opportunities

As regards the question of short-term and long-term measures to improve the economic conditions in re-settlement colonies, there is no such scheme with the government of India. People's representatives have their own reservations on this issue. They feel that prior to shifting these people from squatter areas, government should have thought of providing them job opportunities. Due to shifting, their earning capacity has been affected to a great deal. A new equilibrium is reached when people settle themselves to a lower income level. Some people have to change occupation and some remain unemployed. But according to officials this is a temporary phase. With the lapse of time, people will adjust themselves at new places at higher levels of average income. For example, in Shakurpur, the Britannia Biscuit factory can provide job opportunities to these re-settlers. Delhi Small Industries Development Corporation (DSIDC) has started some small industries, workheads and training programmes in a few re-settlement colonies. Officials feel handicapped to do any further work in this direction due to financial limitations. As such, the Ministry of Works and Housing is the only source of financial support to these relocation schemes. Of course, when the work was with the DDA some efforts were made to raise funds through Delhi Lotteries. Thus, it is evident from the discussions with the officials that there are no concrete schemes with government to raise living conditions of these re-settlers except that they propose to do so indirectly by: (i) developing work advantage of the industries that are likely to come up in the New Okhla Industrial Development Area.

RE-SETTLEMENT POLICIES

According to people's representatives, the present policy of providing

25 sq. yd. plinth area for the construction of a house is not adequate particularly when the size of family in these re-settlement colonies is large. In the beginning there was a provision of at least 80 sq. yd. which was a better housing provision. Officials do not agree to revise the policy in this regard due to the limitation of land as well as the high growth rate of squatter population in Delhi. Besides, in earlier case when 80 sq. yd. land was provided, most often it was sold to others and many Jhuggi dwellers returned to the old or new squatter sites.

There are no new attempts towards formulating new re-settlement policies. At present the Slum Department is, however, trying to consolidate its efforts towards removing deficiencies in terms of the availability of services and amenities. Still the officials have the following new policies in their mind for a better relocation plan:

- (i) plot should be offered near the place of work;
- (ii) size of plot may be increased to 40 sq. yd;
- (iii) re-settlement colonies should be fully developed before shifting families;
- (iv) slum dwellers should be given reasonable time to shift at the new sites;
- (v) some financial assistance in the form of grant should be given to the poor; and
- (vi) as a bold policy the plots may be sold on 'no profit no loss' basis to help these people to build their houses according to their financial resources instead of giving these plots free of cost. In such a case everyone would like to possess a plot. Once these plots are sold, the price will be covered in instalments. The Nationalized Banks can also play a vital role in providing loans, etc., to these plot holders on the security of these plots to help them in building houses. Individual water and electricity connections should also be given to these people for which they should be made responsible to pay the charges.

A BROAD POLICY FRAMEWORK

Before recommending policy options for re-settlement based on empirical analysis or otherwise, let us, at the outset, try to build up procedure whereby the very problem of squatter growth could be minimized. This will, however, lessen the amount of resettlement work and will enable the government to concentrate more on removing deficiencies in the supply of services and amenities to those colonies. In absence of such a procedure, the policy measures of any kind will be quite unrealistic. For example, the growth of squatters at the present rate would never allow the government to implement the J.J. Removal scheme effectively and satisfactorily.

It is proposed that whether the people are in squatter settlements or in re-settlement colonies, efforts should be made to impart them technical training so as to make them eligible for getting jobs in factories or industries. Creation of job opportunities either by locating industries near the re-settlement colonies or relocating squatter dwellers near these industries should also be undertaken by the government. In this connection, agencies like DSIDC can play a vital role in securing jobs for these people. Besides, a regional approach for a countrywide development should also be undertaken so that more number of small towns or large villages may be identified in the form of growth centres and service centres on a rural-urban continuum. However, one cannot confine the regional development activities to the hinterland of Delhi City although it is a very vast area where people can come even from a distant part of the country. These growth centres and service centres would possess necessary socio-economic overheads for sustaining small-scale industries which, in turn, would be based on local resources like agriculture and its allied activities. These centres would attract the rural population and, therefore, would lessen the burden of migration into the metropolitan or big cities. The development of Ring Towns and the proposed National Capital Region at large, should also make a headway in this direction. Job opportunities should be created at the Ring Towns before shifting these squatters

We find that the real solution to the problem of squatters growth in Urban Delhi lies in the development of its region. It is only after the adoption of such measures that the task of relocation can be accomplished in its true perspective. Otherwise, resettlement policies, however, attractive they are, will remain, more or less, a paper work.

MEASURES TO PREVENT SQUATTING

Apart from adopting a regional approach as an indirect measure to control future growth of squatters in Delhi, it is equally important to continue with certain direct measures as well. For instance, once the squatters are removed from a public land, it is the policy of the government to prevent fresh squatting on these vacant lands. No concession is given to anybody who squats on thereafter. What is important is that existing squatters should be made to understand that they have to move out and if they do not avail of the offer made to them under any scheme approved by the government, they will be evicted from their present sites and prevented from squatting elsewhere. If such a firm stand is not taken as was the case in the past, the problem of squatting in Delhi will not be solved but will be accentuated in future. Here a question arises: where would these people go if they are not allowed to squat on public or private lands? The government may be able to prevent squatting on vacant lands under the J.J. Removal Scheme but they cannot, obvi-

ously, do so either in existing old squatter settlements or that would come up in future. On the other hand, their influx into the capital is bound to continue and cannot be prevented under the existing laws. Under such circumstances, the suggestion of people's representatives towards creation of residential areas for this section of population seems to be eye-catching. Either built-up tenement can be kept ready in these recognized areas for which a nominal rent can be prescribed, or only plots can be provided in the first instance to these people on 'no profit no loss' basis. Later on, these people can construct their tenements as they have done in re-settlement colonies. While locating such residential areas, the possibility of establishing some industries or the nearness of already existing industries, should be kept in the forefront. Also, there should be training schools free of charge for these people to make them fit for industrial jobs.

STRATEGIES BASED ON THE EMPIRICAL ANALYSIS

The strategies for removing the lacunae in the past and present re-settlement policies should, in fact, emerge from the analytical frame and empirical analysis of the study. This lacunae may be existing either in terms of social and spatial accesses to select facilities like public transport, water supply sewerage, electricity, health, education, housing, post and telegraph, recreation and market; or in relation to the procedure that was adopted while shifting people to re-settlement colonies. While suggesting these measures, both the views of households in the sample of study as well as officials and people's representative have been considered.

Stability in Administrative Control

It is noticed that there has been quite frequent change in the administrative control of the Slum and J.J. Wing. This change should be avoided to the extent possible, otherwise there cannot be any stability in the vertical orchestration in the administrative system. Besides, on the one hand, the formulation and implementation of new re-settlement colonies is the task of the Director, Commercial Management (DCM) who works under the control and supervision of the Commissioner (settlement) in DDA whereas the conservancy part, i.e., the maintenance of existing re-settlement colonies is the responsibility of the Slum and J.J. Wing in the MCD. This dual control has led to chaos in working conditions in the Slum and J.J. Wing. While the records are lying with the Slum and J.J. Wing, the people are going round-and-round for getting their work done. To avoid such harassment to the public as well as for the sake of dovetailing the activities of the two separate departments, it is essential to merge the concerned office in DDA with the Slum and J.J. Wing.

Size of the Plot

A change in the size of plots from 80 sq. yd. to 25 sq. yd. has already

taken place in the past. Keeping in view the financial difficulty and the paucity of land in Delhi, it is really difficult to go back to the provision of 80 sq. yd. plots. But it is equally necessary to increase the size of plots from 25 sq. yd. to 40 sq. yd. at least. It was revealed in our field survey also that households in new re-settlement colonies are not satisfied with present accommodation. About half of the respondents consider it to be worse than what was available to them in squatter settlements: where 72 per cent cases had the size of plot more than 25 sq. yd. The provision of 40 sq. yd. plot would enable the squatter families to build individual houses with adequate chance to add one more extra room and also enable construction of individual latrines resulting in better sanitary conditions.

Ownership of Plots

While conducting survey in re-settlement colonies, it was noticed that mostly the tenements are nothing but shacks and huts which resemble those in the squatter areas. To improve the housing conditions in re-settlement colonies, ownership of plots should be conferred on resettlers. It will be a bold policy to sell the plots on 'no profit no loss' basis to squatters and realise their price in easy instalments. The only lurking fear, however, is that plots given in this fashion are likely to change hands. This, of course, can be removed by adequate safeguards on benami transactions. The Corporation can take advantage of this policy in many ways, viz., by levying house tax and ensuring regular payments of lease money. And, at the same time government can recover on instalment basis most of the expenditure that is being incurred on the J.J. Removal Scheme.

Shifting of Squatters

We have noted that it was mostly due to the government intervention that the squatter families had to shift to the new sites. More than 95 per cent respondents give this reason for leaving squatter settlements. Not a single respondent in the sample, however, seemed to be tempted by the availability of plots free of cost and interest free loan for the construction of house at the time of shifting from squatter settlements. Out of 370 respondents, 119 (32.16 per cent) still prefer to go back to the old sites. Major reasons given in this regard are the nearness of the place of employment and availability of household works for their wives in nearby localities. Perhaps, these were the two main reasons which did not allow them to put more weight on the availability of free plots and interest free loan for the construction of house particularly when these were otherwise available to them in old places free of cost with more space. But on the other hand, it was observed that no advance notice was served on squatters before shifting them to new sites. Also, government did not either take their consent nor the new sites were shown to the squatters before

shifting them. Besides, relocation was done without developing the new sites fully. These facts have been very well endorsed by the government officials during their interviews. According to people's representatives this happened because things were moving very fast and these formalities, would have taken years in finalizing the plan. The shifting was done in a haphazard manner and without information to those involved in the process. Moreover, it was done on the basis of individual family without regard to the social networks or to the community ties that existed among various families and without realising that such settlements had developed symbiotic relationship between social and spatial system. No dislocation allowance was paid to the evacuees and also the provision of truck facility for shifting was not uniform.

In the light of above discussion, it is suggested that : (i) implementation of a J.J. Removal Scheme should not be done in a hurry; (ii) advance notice should be served on the squatters and also all the pros and cons of the programme should be brought to the notice of the squatters; (iii) a dislocation allowance should be given to the squatters; (iv) truck facility should be given uniformly; (v) shifting of people should not be based on individual family only, but on squatter settlement as a whole; (vi) site should be shown to the squatters before shifting them, and (vii) relocation should be undertaken when sites are fully developed.

Site Selection

The most important task is the selection of sites for new re-settlement colonies. So far, in a majority of cases we have observed that squatter families have been shifted at the outskirts of the city which has not only affected their income but has also caused immense inconveniences especially because their expenditure on transport has increased and their wives have lost household jobs. It was noticed in the survey that the percentage of respondents travelling more than 20 km to go to their place of employment from residence is 12.7 in the case of selected new re-settlement colonies. The average distance travelled by a respondent for going to the place of employment from new re-settlement colonies comes to 11.80 km and the average time spent is more than one hour each way. Obviously the average amount spent in new colonies is Rs. 32.21 which is more than 10 per cent of their average monthly income. Housewives of these re-settlers have also to spend an amount of Rs. 20.93 for travelling a distance of 6.29 km in 40.65 minutes on an average in new re-settlement colonies. The situation in old re-settlement colonies is comparatively far better. It is, therefore, suggested that new sites should be selected, as far as possible, nearer to the place of employment.

Construction of Tenements

As discussed earlier, housing condition in re-settlement colonies is very

poor. The only solution to improve the conditions is to allow the resettlers to construct their houses according to the standard design evolved by the DDA. Of course, this strategy has to be preceded by the policy of sale of plots on 'no profit no loss' basis. It has been observed in the field survey that no tenement was constructed by the DDA. But there are a few cases in old colonies where DDA as well as Delhi Improvement Trust constructed houses. The same work can be resumed by the DDA now without any financial and time constraints.

'Eligible' and 'Ineligible' Squatters

No discrimination between 'eligible' and 'ineligible' squatters should continue. Of course, with the passage of time, this has already disappeared to some extent but in future it should be made as a policy not to adopt it again.

A Composite Colony Scheme

Before the emergency, the resettlers were spread over throughout the city. They were living in a mixed community due to which various types of jobs were available. After these people were shifted to the re-settlement areas, availability of jobs declined considerably, particularly for the women folk. It is, therefore, suggested that a composite scheme should be formulated where 50 per cent land should be reserved for EWS and the remaining 50 per cent should be kept to house better class people. This will revive the ties between one who needs the job and those who need people to work.

Deficiency in the Provision of Services

The overall comparison between the old and new re-settlement colonies also reveals deficiency of services in the latter except that the buses have been considered as regular by a larger number of respondents in new re-settlement colonies. On the other hand, the availability of services as compared by the respondents before and after their shifting to new re-settlement colonies, turns out to be worse than what they had previously. Efforts should, therefore, be made to improve the standards of services in the light of their spatial access to the resettlers. In the succeeding paragraphs, an attempt has been made to suggest measures to improve the quantity and quality of the selected services.

Public Transport: It has been observed that new re-settlement colonies are far removed from the centre of the city and the residents have to travel a long distance to reach the place of work and yet they have a low level of average income. As stated earlier, they spend about 10 per cent of their monthly income and travel more than one hour to reach their place of employment. One should, therefore, think in terms of introducing some cheap and faster services to these poor localities. The frequency as well as

regularity of buses also call for improvement in the management of the service.

Water Supply: The need for a larger number of public stand posts is backed by the field data. Both in old and new re-settlement colonies, 32.74 per cent households have reported that public stand posts remain out of order in their colony. The spatial access to public stand post does not seem to be adequate particularly in new re-settlement colonies. Over-crowding at these public stand posts also is a common phenomenon. Only 4.05 per cent respondents state the water supply in their colony as adequate. The number of municipal water connections is almost negligible. Under these circumstances, it is necessary to extend supply lines to these colonies as a long-term measure. A larger number of hydrants should be provided as a short-term measure to overcome the inadequacy in water supply.

Sewerage: Sanitation is the biggest problem in these colonies as most of the re-settlers are illiterates. To maintain cleanliness in the area it is necessary to make special efforts. Also while providing latrines, they should not be kept very close to households.

Health: Availability of good dispensaries and good doctors should be increased in re-settlement colonies. Doctors should be instructed to examine the patients carefully.

Electricity: Domestic connections have not reached the new re-settlement colonies. Efforts should, therefore, be made to provide them soon. Also there is a need for a larger number of street lights as 78.11 per cent respondents state that their requirement not being fulfilled.

To sum up, re-settlement colonies, as the situation exists, are undoubtedly located far from the place of employment. This remoteness has caused inconvenience to the resettlers and has increased their expenditure on transport. Family income has also been affected due to reduction in the employment opportunities for women-folk. Also, the provision of services and amenities has proved to be spatially inadequate. The change in the policy to reduce the size of plot from 80 sq. yd. has made the living conditions in re-settlement colonies no better than squatter settlements. Besides, the *modus operandi* adopted for shifting the squatters has resulted in 'excesses' which are subject to government enquiries at present. Above all, not enough care has been taken for the provision of job opportunities at new sites.

As a measure to solve the problems in existing re-settlement colonies, the improvement in both quantity and quality of services and provision of training facilities and job opportunities should be kept in the forefront. On the other hand, while framing new policies all the issues like: (i) increase in the size of plot from 25 sq. yd. to 40 sq. yd., (ii) ownership of plot; (iii) selling of plot to resettlers on 'no profit no loss' basis; (iv) adopting a *modus operandi* without causing 'excesses' or inconveniences to resettlers; (v) provision of training facilities; (vi) creation of job opportunities at new

sites before shifting resettlers; (vii) relocating people according to the nearness of their place of employment, and (viii) formulation of a composite scheme by reserving 50 per cent land for EWS and the remaining 50 per cent for better class people, should be envisaged. Last but not the least is the adoption of a regional planning approach by creating growth centres in the hinterland of cities and towns, so as to reduce the rural-urban migration to minimize the growth of Jhuggi-Jhompris in metropolitan cities like Delhi.



Traffic Management in Urban Transport

P.G. PATANKAR*

THE INSTITUTION of Civil Engineers UK has defined the 'Transportation Engineering' as:

"that part of engineering which deals with the planning, design and performance of transportation facilities of every kind in order to achieve the safe, convenient and economical movement of people, materials and goods."

Traffic engineering can be sub-divided in three phases:

- (i) traffic planning of new roads; and
- (ii) the geometric design of new roads and improvements to existing roads; and
- (iii) the control of traffic on the existing roads so as to make the most economic use of them.

The Royal Commission on Local Government in Greater London referred the third phase of 'Traffic Engineering' as 'Traffic Management'.

The term appears to have been first used by Sir James Dunnett in evidence given to the Commission early in 1960.

Traffic Management, simply expressed, is the exercise of control on the use of roads so as to obtain their best use in the general interest. The 'best use' is referred in terms of increasing the capacity of the streets and junction so as to provide for more vehicles to use the streets more smoothly and with less delay and higher safety. However, in my opinion the 'best use' should be expressed in terms of increasing the mobility of people and goods rather than vehicles. Our motive should be to move more people and goods and less vehicles. In other words, our approach should be to maximize the movements of people and goods in terms of passenger kilometres and ton kilometres respectively.

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In traffic management techniques, the existing pattern of streets has to remain by and large but the pattern of traffic movements is changed to get the maximum mobility, that is, minor changes to the streets and major changes to the traffic. In major improvement schemes, on the other hand, the aim has generally been to alter the streets and inter-sections to fit the existing pattern of traffic, that is, major changes to the streets and minor changes to the traffic. It is to be hoped that this difference in emphasis will eventually disappear and that major improvements will be designed to take full advantage of traffic management techniques leading to cheaper solutions with greater reserve capacities.

Traffic management is thus concerned with such activities as:

- (i) minor alterations to kerbs and islands, particularly at junctions;
- (ii) the control of moving vehicles to reduce conflicts, *e.g.*, by one-way streets, turn prohibitions, or traffic signals; and
- (iii) the control of standing vehicles, *e.g.*, by restrictions on waiting, loading and unloading and stopping, and by parking metres, and as a consequence, the positive provision for standing vehicles by means of lay-bys and off-streets parking facilities.

Traffic Management, however, is not exclusively concerned with a motor vehicle. The pedestrian is as much a unit of traffic as an auto, and the provision of facilities for pedestrians to move and cross roads safely, is, therefore, an important function of traffic management.

Traffic management has its greatest application in urban areas and is of particular importance at the present time. Major improvements in urban areas take a long time to plan and execute. As such, in the immediate future, traffic management on a largescale will be required to increase the capacity of the existing urban network until improvements and new roads can take over.

As an outcome of these developments, preparation of 'traffic operations plans' (TOP) are becoming popular day by day.

The road network in any city is the result of evolutionary development. Today many roads in our cities cannot serve the functions they are now required to perform. Many of the roads were made before it was even known that automobiles would dominate the road traffic. Since the roads were first built, major location changes and development of new traffic generators have occurred. To cater for the needs of the increasing number of automobiles, attempts have been made in every metropolitan area to widen the existing roads and also to increase road kilometrage as far as possible.

Various schemes for improving traffic flows include:

Improvement of geometry of straight reaches and intersections;

Tidal flow arrangements by provision of automatic light signals and areas traffic controls;
 Provision of one-way streets;
 Permanent road signs;
 Provision of channelizers;
 Movable barriers and
 Provision of overhead bridges for pedestrian crossings, etc.

URBAN TRAFFIC PROBLEM

Growth of Vehicles

As a consequence of changing urban growth patterns, urban motor vehicle travel has risen sharply in the last three decades in India. The number of automobiles is increasing very fast in the country and a large portion of these vehicles is naturally concentrated in urban areas. The number of motor vehicles on roads in the country as on March 31, 1976 was 31,12,537 compared with 2,11,949 at the end of March, 1947. Thus, the vehicles have increased by about 15 times during a period of 29 years. Table 1 indicates the magnitude of growth of different types of motor vehicles in Delhi.

TABLE 1 GROWTH OF DIFFERENT TYPES OF VEHICLES ON ROAD IN DELHI 1961-1977

Types of vehicle	As on 31st December				
	1961	1966	1971	1976	1977
Cars and Jeeps	15899	31348	61521	93196	99736
Motor-Cycles and Scooters	14325	31351	109112	232459	259489
Auto-Rickshaws	3410	6243	10812	16295	16986
Taxis	2016	2838	4105	4996	5138
Buses	1450	1792	3266	5891	6471
Goods Vehicles, etc.	3952	7223	15262	24081	29094
TOTAL	41052	80795	204078	378918	416914

The above figures reveal that during the last 16 year period, *i.e.*, from 1961 to 1977, total vehicles in Delhi increased to about 10 times, motor cycle to about 18 times, motor cars to about 6 times, Auto-Rickshaws to nearly 5 times, Taxis 2.5 times, Buses 4.5 times and goods Vehicles 7.4 times.

This tremendous increase in the number of Motor Vehicles in Delhi has seriously affected traffic conditions in different parts of the city in several ways including parking.

Large scale parking of vehicles on roads has not only reduced traffic

capacity of these roads but also has created safety problems which are assuming alarming proportion. The number of accidents is on the increase as can be seen from Table 2.

TABLE 2 ROAD ACCIDENTS IN DELHI

<i>Description</i>	<i>1975</i>	<i>1976</i>	<i>1977</i>
Total number of accidents	3,328	3,840	4,034
Persons killed	510	587	693
Persons injured	2,853	3,730	3,832
Vehicles involved	5,094	6,053	6,256

It would be observed that the number of persons killed in the accidents has increased from 51 in the year 1975 to 693 in the year 1977. Number of persons injured has increased from 2853 in the year 1975 to 3832 in the year 1977. The total number of accidents has increased from 3328 in the year 1975 to 4034 in the year 1977. Number of vehicles involved in the accidents have increased from 5094 in 1975 to 6256 in the year 1977.

SPECIAL FEATURES OF THE PROBLEM

People cannot move freely in various urban centres in developing countries. The 'to and fro' journey to the place of work takes as much as 2-4 hours in majority of the cases in cities like Bombay and Calcutta. Pedestrians have no place to move on footpaths. It is becoming increasingly difficult even to cross many of the main thoroughfares. The street traffic and pedestrians seem to clash continuously. Longwinding queues are seen at almost all bus stops. Trains, wherever they are, are running sardine-packed. There is not only no place to move for cars but also no place to park. Vehicles move at snail's pace. The speed of all traffic is coming down very fast and though man has a 30 hp auto at his command, he moves at the speed of a bullock-cart in metropolitan centres.

This problem exists not only in developing countries but also in various cities in developed part of the world; but there is a difference. More developed cities in the developed part of the world can take various measures and augment and improve the transportation systems at a faster pace, and probably much before chaotic conditions develop on streets. On the other hand, in developing countries, because of the limited resources, more stress has to be given to augmenting the existing systems. Funds for development of new and powerful systems are lacking. The car ownership in developing countries is low. Public transportation, therefore, needs the highest priority. For instance, India cannot afford to give the same priority to the automobile traffic as is given in some principal cities in the world where

car ownership is high. There is one car for every two persons in the United States. In the United Kingdom, the car ownership is one car among 250 persons. This not being the case in a developing economy, special approach is necessary to tackle the problem of mass transportation in cities and it cannot blindly copy systems in cities like London, Tokyo and New York.

MASS TRANSPORTATION

The expression 'Mass Transportation' indicates a system in which great volumes of passengers are moving. Thus in big cities, it is a necessity to adopt large capacity modes of transport, particularly along the corridors of heavy traffic demand. The choice of modes of transportation, however, must be made within reasonable, practical and economical limits. It would not be economically feasible to introduce a high speed metropolitan railway on stretches where a bus every few minutes would easily perform the task; not would it be technically feasible to operate on a narrow street a bus service for which passenger volume requires an hourly capacity of 40,000 to 50,000 passengers. Mass Transportation thus means any system whereby passengers are transported by a certain agency and for which, operations are restricted by time tables, fixed routes and stops.

When dealing with the various modes of mass transportation, one may conclude that a single system comprises of several means of transportation, viz., buses, tramways, metropolitan railway, etc. The problem, therefore, is not only to choose either, but to ascertain the right proportion of each. Secondly, the quality of any system will depend not only on the transportation needs as such, which is looked upon as a technical matter, but also on how the community and the transportation Systems conform with each other. This will have to be kept in mind in all stages of town planning and land-use programmes. There is also growing consciousness of how transportation affects the environment of cities with regard to noise, air pollution and aesthetics. All these circumstances indicate that the urban transportation problem is a highly complex matter. In developing countries, economic considerations would further put restrictions on planning. The developed countries are operating a powerful system of mass transportation like the underground railway for the last many decades while in a developing economy, even today, the availability of finance puts restrictions on the development of such a railway. This important aspect cannot be overlooked. While drawing plans for development of the various urban mass transportation systems in developing countries, the approach to the whole problem will have to be defined in this context.

The mass transportation problems is mainly a peakhour problem. The major percentage of trips is for going to work in the morning and these

trips are concentrated in a few hours on certain definite routes. The trips are repeated in the evening but in the opposite direction. The hourly passenger carrying capacity, therefore, plays an important role in the configuration of the overall transportation system. Passenger flow is the number of passengers that may be taken during a given time at a given point on a route. If 'n' is the number of transportation units passing a point during one hour, the hourly passenger flow will be 'n' times the capacity of each transporting unit. For a given conveyance, the passenger flow has a limit which depends on the maximum number of passages that can be made, *i.e.*, on the minimum interval in which transporting units can be made to follow one another. This minimum interval depends, in case of road vehicles, on traffic congestion, and in case of railways on the safety intervals to be observed. The idea of the hourly passenger flow is fundamental for the satisfaction of the user, since its perfect adaptation to traffic ensures each passenger to be able to board the first vehicle which turns up.

In an automobile system, 800 automobiles can serve a loading point in an hour in an average system of street network. Hourly carrying capacity would, therefore, be $800 \times 4 = 3200$ passengers in each direction per corridor. In a bus system 200 buses can serve a loading point on a given route. The hourly carrying capacity would, therefore, be $200 \times 70 = 14,000$ passengers in each direction per corridor. In case of a railway, this figure reaches to about 50,000. In every modal system an effort is being made to increase this capacity further by increasing the corridor capacity and/or by increasing the capacity of each transporting unit.

The greatest transportation problem in cities is created while commuting between home and work. The creation of residential zones away from work zones has created a pendulum movement from home to work and back that accounts for a large volume of mass movement than any other type of weekday travel. Naturally, therefore, the traffic is concentrated in certain hours in the morning in one direction while in the evening in the other direction. This makes it very necessary that the metropolitan traffic system should have as large an hourly passenger carrying capacity as possible.

TRAFFIC MANAGEMENT—URBAN BUS TRANSPORT

In a developing economy, optimization of the existing resources becomes of prime importance. Bus transport would continue to be the key-mode of passenger transport for the urban poor and it would be the responsibility of every operator of this transport system to ensure that urban bus transport is optimized with a view to obtaining the maximum carrying capacity from the available fleet, so that the bus transport is economical, efficient and effective. In this background, the low cost measures for optimizing

urban bus transportation facilities become the need of the hour.

The carrying can be maximized by operating the maximum number of seat kilometres in a particular time span. The operation of seats would depend on the number of seats which would be kept moving in a certain period and these in turn would be largely governed by the internal factors such as fleet utilization obtainable, route-planning, bus scheduling, etc. The speed with which the vehicles can move, however, is largely governed by the external factors such as street congestion, road traffic management, etc. The traffic management plays an important role in ensuring optimum utilization of urban bus transportation. It would be the aim to optimize the speed of buses so that not only the operational costs are minimized but also the carrying capacity of the system is maximized. It would, therefore, be necessary to give priority to passenger buses on streets in an urban centre particularly as resources are hardly available for providing a powerful mode like the metropolitan railway as the basic system.

Load Factor

It should be the effort of the engineering management to make available for traffic maximum number of buses with minimum costs while the objective of the traffic management should be to move these buses in such a manner that the 'load factor' is maximum, *i.e.*, the seats are occupied as far as possible throughout the period of bus movements. Load factor, therefore, has to be constantly watched. This factor is the ratio of the 'seat kilometres occupied' to the 'seat kilometers offered'. Seat kilometres offered are obtained by multiplying the total kilometres run by average carrying capacity of the fleet. The seat km. occupied are obtained on the basis of the number of tickets sold assuming that passengers travel full permissible distance against their tickets. The load factor can also be defined as under:

$$\text{Load Factor} = \frac{\text{Earning per seat km.}}{\text{Fare per passenger km.}}$$

Break-even load Factor

Considering the low fare structure existing in city transport undertakings in India, it should be the effort to cover atleast the cost of operation by optimizing the use of the bus kilometres run. This can be attained by watching the load factor and trying to reach break-even load factor.

Vehicle Utilization

With a view to ensuring the maximum utilization of the kilometres run, the traffic management must ensure that the bus route planning conforms to the overall demand assessed by a scientific origin—destination survey and such route planning must be updated from time to time to suit the

changing traffic demand. The bus route planning is, therefore, a continuous process. In various cities, however, the bus route planning is indicated by local considerations and sporadic demands of the various groups and/or organizations. It is hardly dictated by the overall consideration of traffic demand. In an urban bus transport, a load factor less than 70 per cent would indicate that buses are being run on routes and at times either the traffic demand is much below the seat kilometres offered or buses are unable to reach the loading points because of the congestion on the streets and, therefore, traffic, though available, is not actually attracted by the system.

It should also be the effort to ensure that vehicle utilization is the maximum. The vehicle utilization should be judged on the basis of the total fleet held and not on the basis of average number of buses in operation as vehicle utilization in relation to the total fleet would also have a check on the buses not available for services for one reason or another. In an urban bus transport the vehicle utilization would be as high as about 250 kms. The vehicle utilization is controlled by factors such as:

- (a) Total period of operation;
- (b) Extent of non steering hours included in the schedules;
- (c) Street congestion;
- (d) Breakdowns; and
- (e) Non-availability of traffic staff during the operational period etc.

Bus Speeds

The average speed of a vehicle in service is an important factor. The variations in bus speeds are considerable and depend primarily upon congestion and upon other bottlenecks on roads. On certain roads in cities like Bombay and Calcutta, buses move at a speed of a bullock-cart during peak hours. As speed is an important factor in cutting down costs, every route should be subjected to speed tests at least twice in a year in urban areas. This would help updating bus schedules with a view to achieving regularity of service in the interest of travelling public and arranging bus strips so that vehicle utilization is the maximum.

There should be a strict control on the loss of kilometrage on account of non-availability of staff, breakdowns etc. Missing trips bring a bad name to the organization and undermine the confidence of the travelling public. It is possible to reduce this loss to 1 per cent or 2 per cent with allround control on traffic operations. After having scheduled trips with a view to maximizing the load factor, it must be the effort of traffic operational staff to ensure minimum loss of the scheduled kilometrage. Increase in the loss of scheduled kilometres would indicate that either buses are not made available according to schedule or they are not operated on the streets for various reasons as indicated earlier.

It may happen that considering the congestion on the streets, an increase

in the scheduled kilometrage without realistic survey of speeds considering road capacities, bottleneck, etc., would entail a higher loss of kilometrage and thereby avoidable expenditure. Under certain traffic conditions there could be an optimum level of total bus trips beyond which additional trips would not serve the traffic demand in the optimum proportion and in fact would adversely affect the earnings per kilometre. This is a factor which must be carefully watched.

Another parameter would be the passengers carried per 100 seat kms. offered and it would be advisable to fix a level for it, considering the break-even load factor. Any substantial drop in this number would indicate that all is not well and it would be the responsibility of Traffic Managers to analyse this drop, and take suitable remedial measures such as: (a) Re-routing; and (b) Re-scheduling of buses; so that the load factor improves. This happens firstly because the route planning is not necessarily linked to the actual traffic demand and thus buses do not run along traffic corridors of heavy demand. Also the load factor is generally poor during the non-peak hours and bus kilometres are being wasted.

Increased running of buses must be accompanied by the proportionate increase in the passengers carried. Otherwise it would mean that increased kilometres are fruitless.

Incentive Schemes

The traditional system of payment of salaries on the basis of the daily attendance is not related to productivity and, therefore, hardly attracts increased production. A well-worked out incentive scheme, however, motivates employees for increased production. An incentive encourages good workers to give better performance.

The incentive schemes should be governed by the following factors:

- (a) The norms for different jobs should be fixed after proper method and work studies. Simulation techniques become useful for these studies. The aim should be to make an extra payment only for the extra efforts resulting in higher production.
- (b) Appropriate indices have to be selected for measuring production so that scope for malpractices is not available.
- (c) The scheme must provide penalties for sub-standard production.
- (d) The bonus payment should be on the basis of individual performance as far as possible as this provides for the best motivation. However, where assessment of individual performance is not possible because of the type of work, various categories of staff have to be grouped into viable units.
- (e) Provision should be made to recover penalties for absenteeism and such other acts of commission and omission with a view to improving attendance and discipline.

On the basis of these principles, incentive schemes for conductors, drivers and engineering staff help improve productivity on roads and in this context they form a part of dynamic traffic management.

The purpose of an incentive scheme for conductors would be to induce them to carry stipulated number of passengers and with a view to ensuring that correct fares are collected from all the passengers. In the BEST Undertaking a scheme has been successfully implemented where conductor gets 3 per cent of the additional amount brought by them over a certain minimum. There is an incentive scheme for bus drivers and engineering staff and the incentive is related to the loss of kilometrage. Here again the scheme induces staff concerned to make an all out effort to ensure that as far as possible the scheduled kilometres are actually run. Similarly, incentive schemes can be implemented for various shops in the engineering workshops. With such schemes, the fleet utilization can be as high as 92 per cent and efficiency and performance level goes upto about 125 per cent. All this achieves increased production with minimum manpower.

STREET CONGESTION

The drain of limited resources available to the urban bus transport system is caused by street congestion, a negative environmental force on the productivity of bus transport. Various factors contributing to productivity in urban bus transport are related to time. In fact in the modern era, time is the fundamental requirement of the entire bus transport system. Commuters desire to reach their destinations in as short a time as possible. From the operator's point of view also, the earlier the passengers are commuted, the better the utilization of the transport capacity. The operational cost also increases with the increased time of travel. More time means slow speed and slow speed means more wear and tear on the vehicle, higher fuel consumption, etc. The street congestion, therefore, is the significant blockade as far as productivity in urban bus transport is concerned. Using certain empirical factors it has been worked out that yearly kilometres covered by a bus are 5250 V.F. where 'V' is the speed in kms. per hour and 'F' is the fleet utilization coefficient allowing for repairs, maintenance and breakdowns. It would thus be seen that the higher the velocity, the greater the utilization of the vehicle. A reduction of one kilometre per hour in the average speed of a bus which is about 16 kms. per hour in Bombay at present, would reduce the kilometres run by about 7 per cent.

$$\frac{V-1}{V} = \frac{15}{16} = 0.93$$

It is, therefore, essential that urban bus transport must be given priority in the matter of allotment of roadwidth so that buses can move faster

thereby making available a higher capacity to passengers. In fact a stage has come in the two metropolitan areas of Bombay and Calcutta where cars have to be banned from certain areas in public interest. Bus transport must get priority and this could be achieved by:

- (a) measures to improve the street traffic flow;
- (b) allowing buses to stop where convenient to passengers even though within limits, this impedes other traffic;
- (c) exempting buses from restriction on turning movement;
- (d) providing 'Bus Only Lanes' on congested streets;
- (e) permitting buses to move in the opposite direction on one way streets;
- (f) discouraging private cars in the Central Business District;
- (g) prohibiting other vehicles from waiting within a specified distance of any bus stop and rigidly enforcing in the interest of all road users as well as bus passengers.

Taking the case of the BEST, with every kilometre per hour rise in the average speed, there would be a 6 per cent rise in the kilometres covered. The yearly kilometres covered are about 90×10 per year. The increase would, therefore, be 5.4 million kms. Yearly addition to the seat km. would be 5.4×70 million. The daily extra seat kms. would be 1,080,000. At the rate of 14 passengers per 100 seat kms. additional passengers carried would be 15,200. In other words, for every 1 km. per hour increase in the average speed, the BEST will save 75 buses. This is based on the present level of production in the BEST Undertaking, which is paying so high a cost for the congestion in the street.

Priority for Public Transportation

Considering the resources available in a developing economy, there is no doubt that top priority must be given to the needs of public transportation systems and this is probably the most important aspect of the overall transportation planning. The policy should be to move more people and not more cars. The entire transportation planning in cities in developing countries must emerge from this basic requirement.

Bus Priority Measures

Bus priority measures are generally classified into two categories:

- (a) Geometric preferential measures;
- (b) Real-time control measures.

The geometric preferential measures are further divided into those that are applicable to freeways and those that are applicable to the arterial street network.

BUS WAYS

Geometric preferential measures range from simple curb radii improvements at an intersection to construction of an exclusive right-of-way for buses. Exclusive bus roadways on their own right-of-way with complete control of access would provide the highest type of service. These facilities can penetrate and effectively serve the various centres of activities in an urban area. Intermediate stations and access ramps can be provided as necessary. Design standards can be tailored to specific operations and it is not necessary to limit vehicle size, operating speed or hours of operation. Such a measure, however, would be very costly with limited resources and a stage has not come in developing countries for providing bus roadways on their own right-of-way. Bus ways are costly and slow to implement.

BUS LANES

Though Bus Ways are costly, bus lanes can be provided on the existing congested streets to improve the bus flow. Bus lanes can be provided in the normal direction of traffic with a view to giving priority to bus traffic. It must, however, be ensured that such lanes do not create unbalanced operations and that the bus lanes are fully utilized. There are no doubt certain disadvantages such as weaving problems. Also bus-flows many a time do not equal the capacity of the lane.

CONTROLLED BUS LANES

A wrong-way or contra-flow bus lane using a portion of the roadway that serves relatively light traffic in the opposite direction is recommended in cities like Bombay as such lanes improve bus-flow and at the same time do not reduce the peak directional highway capacity for the other traffic. Such contra-flow bus lanes are existing in Bombay. These lanes not only improve the bus-flow but also speed up the other car traffic. Potential problems include the need to remove immediate barriers at cross ways or transition points looking the exclusive lane by accidents of stalled buses, safety and possible congestion in the remaining off-peak direction. It is not possible to provide stations or interim access for buses and successful application is contingent at high directional imbalance in traffic volumes. In Bombay, the introduction of such contra-flow lanes has speeded up bus operations. One such exercise shows on a very congested road in Bombay that late arrivals at termini of buses operating on 11 routes enjoying contra-flow facility were reduced by 65 per cent.

AUTO-FREE STREETS

Auto-free streets represent a major commitment to down-town transit and development. Such streets provide complete separation of cars and buses. They improve not only the transit facility but also create better environment for pedestrians. They are difficult to implement, however, because of access requirements to the adjacent buildings and the need for alternate parallel traffic routes. The auto-free street concept could be extended to an entire down-town area. A scheme has already been prepared for auto-free zone in the central business district in Bombay.

TRAFFIC ENGINEERING IMPROVEMENTS

Coordination of road construction and traffic improvements of bus services will improve street efficiency. Street improvements and removal of bottlenecks will improve bus effectiveness. These improvements include street extensions to increased traffic capacity or bus routing continuity, traffic signal improvements, such as system coordination, intersection improvements, turn controls for special permits for buses, bus lay-byes for loading and unloading, bus stops lengthening, longer curb radii, etc.

REAL TIME CONTROL MEASURE

There are two forms of bus priority real-time control measures. The first form deals with strategic measures of optimizing the bus operations. These measures hinge on ability to know, within a reasonable degree of accuracy, location of vehicle within a fleet, the identification of each vehicle and the status of each vehicle (in service, number of passengers, etc.). The second form of real-time bus priority control measures deal with technical measures by improving bus operations and are primarily concerned with changing the timings of specific traffic signals to favour bus movements.

STRATEGIC MEASURES

On a street, a bus is subjected to a variety of factors which tend to force its assigned schedule. Traffic congestion, rains or heavier than normal passenger traffic can contribute to schedule instability. Any delay in an operation of bus, allowed to go uncorrected, can mushroom into more lengthy delays affecting all buses on the same route. The escalating process is known as dynamic stability. This instability is inherent in high density bus operations as in Bombay. Longer loading times due to more waiting passengers at some stops will make a bus late which in turn will

find more passengers than average at the next stop. The bus following will find even fewer than average waiting passengers at the next stop and hence gain on the bus in the front. This is the phenomenon wherein bunching occurs. The equilibrium is unstable in as much as small variations get amplified and propagated back through the chain of buses on the route. The deviations from regularity will get worse as one moves away from the start of the route, assuming that the buses start there on time with scheduled headways. Since despatched headways are usually not precise in bus operations, there is an additional source of built-in instability. The real-time control and strategic control measures are designed to minimize the phenomenon of dynamic instability by instituting various control measures such as:

- (a) scrutiny of departure times until bus intervals and schedules are back to normal;
- (b) instruct a bus that is gaining, to wait at the next stop to maintain the proper headway;
- (c) instruct a bus that it is slightly off schedule to increase or decrease its running speed until it is back on schedule;
- (d) instruct overloaded buses that are behind schedule to skip one or more stops;
- (e) instruct a bus turn around by giving short trips to fill a service gap in the opposite directions;
- (f) put extra vehicles into service to meet extraordinary demand;
- (g) remove vehicles from service when demand is slack; and
- (h) instruct a vehicles to deviate from its normal route to avoid bottlenecks such as accidents.

Considering the techniques and equipments available, this can be done with mobile vans with radio equipment. More sophisticated equipment is, of course, available in developed countries.

Both geometric and real-time bus priority measures offer significant benefits to the public. Both classes of priority measures must be integrated with the proposed traffic surveillance and control system to achieve optimum results in the total traffic management control system.

CONCLUSION

Urban centres are becoming more and more immobile. Every city is experiencing the phenomenon of tangled traffic. Metropolitan immobility is aptly called 'Traffic Thrombosis'. Good and steadily improving transportation is a must for improved productivity and livability in urban areas. This is no doubt possible through capital intensive projects like Metropolitan Railway, Grade Separated Highways, etc. But in a

developing economy like India, a stress has to be given to softer options and in this context Traffic Management measures will have to be given the highest priority.

□ □

Financial Performance of the CSTC Vis-a-Vis Private Operators A Comparative Study

D.K. HALDER
and
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ROAD PASSENGER transportation in urban areas is fast coming under the fold of Government management all over the country. In most of the big cities of India, bus services are now sponsored by the State Government; in some places private operators have been totally excluded; in some others they are plying side by side with the State buses, in order to supplement the inadequate supply of transportation means offered by the state endeavour so as to cope with the heavy demand for the same.

In the city of Calcutta, State Buses first appeared as early as on July 31, 1948, initially with a small fleet of 25 petrol driven buses operated mainly on less remunerative routes where the private operators were not interested because of lesser profit potentiality. Gradually the fleet expanded and more routes were covered. In June 1960, the Calcutta State Transport Corporation (CSTC) was set up in accordance with the provisions of the Road Transport Corporation Act of 1950. The routes of the city were being gradually nationalized since 1954 and by the year 1964 private operators were altogether ousted from the city routes. The CSTC enjoyed virtual monopoly in bus services in the metropolis between the years 1964 and 1967. But it failed to keep pace with the growing demand to travel needs and the services deteriorated miserably, causing immense suffering to the commuting public. In this situation the Government was compelled to permit private buses again on some selected city routes in November 1967. At present, private buses are in co-existence with the State Buses. In the metro-core comprising of the city of Calcutta along with the neighbouring areas falling within the districts of Howrah and 24 Parganas, of the estimated total demand for travel trips of about 60 lakhs per day, private buses meet demand to the tune of 35.50 lakhs as against 8 lakhs met by the CSTC and rest by other travel modes such as tram cars, mini-

buses, taxi cabs, etc.

The early years of the CSTC were glorious with record of mentionable net surplus in its working results amounting to Rs. 11.54 lakhs and Rs. 14.96 lakhs in 1960-61 and 1961-62 respectively. Till 1965-66, though there were deficits in the overall trading results, the working expenses (excluding some overheads) could be covered from the annual receipts leaving some surplus margin to cover part of overheads. It was in 1966-67 that there first appeared, in the overall financial result, a deficit margin of such a magnitude as not to cover even the operational expenses. From then on, the deficit gap has been increasing every year almost by leaps and bounds and the gap reached the enormous size of Rs. 1114.80 lakhs in 1976-77 and Rs. 1295.39 lakhs in 1977-78; the cumulative net deficit over years amounts to about Rs. 80 crores

The object of State management of passenger transportation has been mainly to alleviate the irregularity of service and to relieve the travelling public of harassment, inconvenience and exploitation in the hands of private operators. To guarantee security of job and provide participation of workers in the management are also important objectives in any nationalized undertaking. The objectives may be briefly defined as improvement of services, fullest participation in the management by the workers, effective safeguarding of the interest of consumers and permanent welfare of the community as a whole. But mere nationalization is not all. To set up a public enterprise is to do only half the work; to run it efficiently is the other and more important half of the task. The ultimate justification of a State enterprise depends much upon the quality of service and the cost at which the service is provided.

So far as the CSTC is concerned, the quality of service can in no way be considered satisfactory. Prolonged waiting on the wayside to get the sight of a state bus of a particular route is the daily experience of the people of Calcutta. Speed is low in most part of many routes because of heavy congestion and traffic jam. Comfort in bus is a dream of the commuters because of terrible overcrowding and frequent breakdown is a general rule rather than exception for CSTC buses. The quality of services being thus of a very low watermark, the interest of the consumers is looked after more in neglect than in patronization.

In its financial aspect, the performance is much more miserable. It is a long history of continuous deficits in the net results since 1962-63 with a situation in recent years in which the volume of annual deficit surpasses even the amount of total annual receipt. This means that even 100 per cent increase in the earning of the corporation would not make it run on its own wheels.

Alongside this pitiful economic condition of the CSTC, the private operators are merrily making their business on the City routes. It is not that they are quite satisfied with their position. They have long been

complaining of their difficulties and losses. But that they are operating their services without having them closed down is an enough indication that they are enjoying at least some profit margin, however small that might be. Private operators would not have long sustained in business if there were continuous losses. The purpose of the present paper is to analyse the trend in operational efficiency (in money terms) of the CSTC over years and to compare it with the private buses which are operating side by side with the CSTC buses on the city routes presumably earning some net surplus margin over and above all expenses.

A GLIMPSE AT OVERALL FINANCIAL RESULTS OF THE CSTC

The financial performance of any business unit is but the reflection of its physical performance. For a transport undertaking, financial results are arrived at on the basis of how many vehicles are put on road, how many of them can complete their full trips, etc. A large part of expenses of a transport organization such as, those for general administration, for payments made to the staff including drivers and conductors, etc., is essentially fixed in nature. Therefore, the number of vehicles actually in service and operating effectively helps it not only in earning more fare revenue, assuming that there is no dearth of passengers, as is the case in Calcutta, but also in reducing the per unit expenditure in whatsoever term the unit is considered, say for example, per unit of effective km.

In order to highlight the overall trend in the financial performance of the CSTC over years we give on p.107 the fleet utilization ratio and effectiveness of outshedded vehicles along with the total receipts, expenditures and net results of the CSTC in some selected years. Also some overhead expenses (*e.g.* Depreciation, other Funds and Interest) are shown to indicate the magnitude of deficit (or surplus) if such expenses are left out.

It is evident that with lower fleet utilization and increasing overhead expenses, the net results of the CSTC has continuously deteriorated. The fleet utilization slightly improved during the last two years (Table 1). But overhead expenses for depreciation and interest, in particular, increased enormously and the deficit gap continued expanding.

The evergrowing deficit of the CSTC has now assumed an alarming proportion and at present monthly state assistance to the tune of about Rs. 75 lakhs is required for mere running of the wheels of the Corporation. The situation has been brought about by the failure of the revenue earning capacity of the Corporation to keep pace with the increasing expenditure volume.

EXPENDITURE PER KM OF CSTC OVER YEARS

The CSTC does not maintain average maintenance cost per bus, nor

TABLE I FLEET UTILIZATION AND FINANCIAL RESULTS

Year	Fleet utilization ratio	Effectiveness of outstretched vehicles	Total Receipts (Rs. in lakhs)	Total Expenditure (Rs. in lakhs)	Net Results (Rs. in lakhs)	Some overheads (Rs. in lakhs)		Interest
						Deprcn.	Other funds	
1961-62	75.5	94.96	483.32	471.36	14.96	50.78	5.47	35.76
1962-63	76.8	92.19	514.66	632.31	-17.65	57.92	5.73	34.90
1964-65	70.4	86.82	548.57	620.68	-72.31	51.05	5.56	30.46
1966-67	62.4	83.89	597.68	744.61	-146.93	67.75	5.00	53.26
1967-68	52.9	80.15	607.74	820.14	-212.40	65.84	5.32	58.36
1971-72	42.3	65.68	508.18	1079.68	-571.50	83.52	5.47	126.33
1972-73	45.2	75.76	640.61	1250.00	-609.39	112.59	5.46	168.89
1973-74	40.6	70.52	625.61	1363.28	-737.67	128.32	5.33	208.81
1975-76	40.4	71.56	798.37	1795.91	-997.54	161.01	5.36	343.59
1976-77	49.6	78.78	1065.01	2179.81	-1114.80	194.84	5.27	419.46
1977-78	48.7	81.36	986.85	2286.24	-1295.39	278.01	7.44	472.92

Source: CSTC Transport Statistics.

does it keep any record of average cost of running a vehicle. However, there are records of details of expenditure per effective km per year which are exclusive of Central Workshop. We give in Table 2 the details of such expenses for some selected years in order to show the trend of rise in the expenses.

It is evident from Table 2 that expenses on items (a) rent, rates and Taxes, (b) Audit fees, (c) other contingencies and (d) Contribution to other Reserve Funds increased over years but within tolerable limits. But there occurred a sharp rise in expenses on all other items. The most glaring rise in expenditure during the fifteen years under reference, *i.e.*, 1962-63 to 1977-78, however, occurred on the items: (i) Pay and Allowance—6 times, (ii) Spares and Stores—5 times, (iii) Lubricants—8 times, (iv) Tyres and Tubes—8 times, (v) Repair works—9 times,—of which 70 per cent increase occurred in one year only from 1976-77 to 1977-78, (vi) Contribution to Provident Fund—15 times, (vii) Interest—25 times, and (viii) Bonus—10 times, as compared to 1964-65.

The overall increase in the gross expenditure per effective km (excluding Central Workshop) during the period under review has been about 6 times, and excluding interest, depreciation and other reserved funds, it has been a little less—about 5 times.

In 1976-77, there was rather some decline in expenses for (i) pay and allowances and (ii) Tyres and Tubes as compared to the preceding year. There had been slight decline in expenses for pay and allowance also as compared to the year 1973-74. Decrease in expenses for the year 1976-77 from the previous year level also occurred for items like, (i) Road Tax and Registration charges, (ii) Interest, (iii) Depreciation, and (iv) contribution to other funds. All these were quite good. But the situation in all these respects again deteriorated in 1977-78. Taking two consecutive years, *viz.*, 1975-76 and 1976-77 into consideration, there occurred perceptible decline in the expenses per km by about 8 Paise. But all the hopeful indications were wiped out in 1977-78, when in course of one year only the expenses rose up by more than 100 Paise.

The operational cost per km for the CSTC has been very high for a long time. It was found to be the highest as early as in 1967-68, when, according to a study by the ASRTU, New Delhi, it stood at 214.74 paise for the CSTC as against 112.19 paise for AMTS, Ahmedabad, 128.11 paise for DTU, Delhi and 162.76 paise for BEST, Bombay.

One difficulty faced in course of study on operational costs, etc., is that the information obtained from different sources on the same point often vary widely. However, some meaningful idea can yet be formed if the data collected by the same source are considered. We give in Table 3 the CSTC's own record about its expenditure per km (excluding Central Workshop) in successive years since inception, along with the average number of buses outshedded and effective daily revenue earned

TABLE 2 COST PER EFFECTIVE KM (IN PAISE) EXCLUDING CENTRAL WORKSHOP

Item	1962-63	1964-65	1971-72	1972-73	1973-74	1975-76	1976-77	1977-78
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Pay and Allowance	35.06	44.77	164.46	144.98	170.01	185.50	169.84	210.58
2. Rent, Rates Taxes	0.42	0.54	1.13	1.45	1.30	1.43	1.96	0.31
3. Audit Fund	0.27	0.42	1.34	0.55	0.83	1.24	1.14	1.36
4. Road Tax and Regn. Charges	2.79	4.99	8.33	7.16	7.52	6.48	6.11	6.67
5. Fuel	21.15	27.95	39.80	38.07	40.03	54.25	54.74	56.71
6. Spares, Stores	6.32	10.12	22.74	24.91	18.22	29.84	38.68	30.02
7. Lubricants	1.54	2.16	7.80	4.49	6.94	14.62	13.11	13.31
8. Tyres, Tubes	5.44	8.30	19.08	14.60	21.61	42.50	30.79	43.26
9. Batteries	0.51	0.52	1.50	1.31	1.24	2.97	2.72	2.94
10. Repair Works	4.20	4.41	3.02	5.79	11.78	23.05	23.13	38.45
11. Other Contingencies	12.66	7.65	14.23	10.39	14.07	19.25	20.30	18.20
12. Employer's contribution to P. fund	1.07	1.92	14.22	10.90	13.84	15.46	15.87	15.52
13. Interest	6.50	6.37	53.23	51.88	71.69	116.74	116.55	148.14
14. Depreciation	11.68	11.45	35.91	35.11	44.54	54.89	54.32	65.37
15. Other Reserve Funds	1.02	1.17	2.25	1.63	1.77	1.73	1.39	2.26
16. Retiring Benefits	—	—	—	26.86	—	—	—	—
17. Bonus	—	1.44	12.44	9.19	10.86	—	10.68	13.18
Total	110.63	134.18	428.34	362.41	436.25	569.95	561.33	666.28

(Continued)

per effective km and loss per effective km in each year:

TABLE 3 EXPENDITURE AND REVENUE PER KM *VIS-A-VIS* FLEET UTILIZATION OVER YEARS

Year ending on Mar. 31	Expenditure per eff. km (paise)	Revenue per eff. km (paise)	Average daily outhedding		Average No. of eff. vehicles p/day	
			City routes	long dist.	City routes	Long distance
1961	93.46	97.00	567		535	
1962	94.94	98.29	615		584	
1963	110.63	98.44	666		614	
1964	119.81	105.97	643		566	
1965	134.18	117.56	645		560	
1966	147.93	122.73	689		599	
1967	165.43	129.55	689		578	
1968	201.03	142.10	655		525	
1969	256.07	169.46	593	2	436	2
1970	298.36	173.99	561	2	395	2
1971	347.22	176.34	493	2	332	2
1972	428.34	179.32	471	4	308	4
1973	362.41	171.12	583	11	439	11
1974	436.25	175.74	533	20	370	20
1975	539.24	190.83	489	26	331	26
1976	569.95	222.36	506	32	353	32
1977	561.33	243.65	553	55	424	55
1978	666.28	251.46	508	66	404	66

SOURCE: CSTC Transport Statistics.

It is seen from Table 3 that expenditure per km went on increasing all through till 1975-76, with the solitary exception of the year 1972-73, when it declined quite remarkably by 56 paise or about 13 per cent as compared to the preceding year 1971-72. Such large fall in expenditure per km in a single year was partly due to the fact that in 1971-72 there appeared for the first time an item of expenditure, namely, "Retiring Benefits" which disappeared again from the next year and which accounted for 27 paise of expenditure per km in that year and partly because of a sharp fall in expenditure on pay and allowance per km, which decreased by about 20 paise (from 164.46 p. in 1971-72 to 144.98 p. in 1972-73) in one year and also decrease in expenditure for various other items, though to a little extent (Table 2). These decreases in various expenses per km were caused by the simple fact that the average daily outhedding and the average number of effective buses per day increased in 1972-73 quite appreciably by 119 and 138 respectively as against the corresponding figures for the year 1971-72 (Table 3). Huge increase in the number of

buses on road and of those effectively in service meant much greater km run by the vehicles of the undertaking and the increase in prices of various items in one year, if any, was much more than counterbalanced in working out the average calculation of expenditure per effective km.

INFLATION AND THE INCREASE IN THE CSTC EXPENDITURE

How to explain the enormous increase in expenses of the CSTC over years? Ordinarily, one might argue that this increase has been largely due to sharp rise in prices of materials, etc., over years. But a close examination of the situation would point out that such view is not very much tenable.

The increase in the cost of some of the principal items affecting the CSTC for the years 1962-63 to 1973-74 is presented in Table 4.

TABLE 4 RISE IN COST DURING THE PERIOD 1962-63 TO 1973-74

Item	Cost position in		% rise in cost in 1973-74 over 1962-63
	1962-63	1973-74	
1. Cost of a DD bus (complete)	Rs. 0.86 lakhs	2.25 lakhs	160.00
2. Cost of a SD bus (complete)	0.69 lakhs	1.05 lakhs	52.00
3. Average pay of Staff	1769 p.a.	3466 p.a.	95.00
4. Bonus	4% acc. to Bonus Act '65;	8.33%	108.00
5. Price of Tyres:			
(a) 1000 × 20	Rs. 427	Rs. 830	94.38
(b) 900 × 20	580	950	64.48
6. H.S. Oil	536.74 per kl	858.70 per kl	60.00
7. Road Tax			50.00
8. Rate of Interest on Loans from State Govt., IDBI etc.	4%	6%	50.00
9. There was steep rise in cost of imported goods; in 1962 the rate of exchange was £ 1 = Rs. 13.33 and the customs duty was 42.5%; in 1973-74 the rate of exchange stood at £ 1 = Rs. 19.00 and the customs duty 102.5%.			

SOURCE: Calcutta Gazette Extraordinary, 1973.

Table 4, was supplied to the Banerjee Commission (1972-73) which was appointed to recommend viable fare structures for different travel modes including Buses. In order to establish its case for higher fare the CSTC wanted to show that its costs had increased over years because of rising prices.

The table reveals that during the period under reference, increase in the cost for different items, except a double decker bus (complete) ranged between 50 per cent and 110 per cent; for a complete DD bus the rise was,

however, 160 per cent. But during the same period, the increase in expenditure per km had been as high as about 300 per cent—from 110 per cent in 1962-63 to 436 per cent in 1973-74 and excluding some overheads like Interest, Depreciation and other Reserve Funds the rise was by about 200 per cent—from 91 paise in 1962-63 to 274 paise in 1973-74 (Table 2).

From Table 2 we get the details of expenditure per effective km of the CSTC for the years 1962-63 and 1973-74. We depict below the amount of expenditure per effective km for some items in these two years and find out the percentage rise in each of them during the period. We will compare the degree of rise in price of each item in 1973-74 from 1962-63 level. Ordinarily, the expenditure per effective km for a single item should rise in the same proportion as the rise in price of that item. If the expenditure rises in a disproportionately high manner, that is certainly an indication of declining operational efficiency.

TABLE 5 PERCENTAGE RISE IN EXPENDITURE PER EFFECTIVE KM OF THE CSTC COMPARED WITH RISE IN PRICES OF THE ITEMS

Items	Expenditure per effective km (in paise)		% rise in Exp. in 1973-74 over 1962-63	% rise in corres- ponding price items
	1962-63	1973-74		
(i) Pay and Allowance	35.06	170.01	385.0	95.0
(ii) Tyres and Tubes	5.44	21.61	293.5	94.4
(iii) Fuel	21.15	40.03	89.0	60.0

It is clear from Table 5 that the increase in expenditure per effective km during the period for the items shown therein was beyond all proportions of price rise for each item, particularly for 'Pay and Allowance' and 'Tyres and Tubes'. Such rise in expenditure can in no way be explained in terms of rise in market cost of materials and rise in rates of Pay, etc., alone. There is a big gap between the magnitudes of rise in expenditure per effective km and rise in prices and this certainly has been due to greater consumption of men and materials for each km run in later years which is an indication of increasing inefficiency in the operation and management of the undertaking.

The age structure of the fleet is an important factor influencing the quantitative consumption of men and materials per effective km. The older the age of a vehicle, the greater is the requirement of fuel and materials in running a given distance. This is because the older engines consume more fuel and older chassis and bodies require more frequent repair works. Moreover, as older vehicles require greater attention for maintenance jobs, the consumption of labour is also high and consequently the expenditure per km on the item 'Pay and Allowance' becomes more.

For a Transport Organization, therefore, the lower the percentage of 'young' buses (*i.e.*, those below half of the age of their service life, which is 8 years for Single Decker and 12 years for Double Decker buses) the greater may be the expenditure per effective km.

But on this count also the position of the CSTC regarding excessive rise in expenditure per effective km for the items noted above (in Table 5), in the year 1973-74 as compared to 1962-63, cannot be defended. The percentage of young buses in the serviceable fleet of the CSTC stood at 75.9 in 1973-74—a far higher figure than what it had been in 1962-63 when the corresponding percentage was 59.7. In the present context, therefore, the age-structure of the fleet cannot be considered a factor responsible for rise in expenditure per km in 1973-74 from the level of 1962-63.

Another external factor having its impact on the running cost of vehicles is the condition of the road-surface. Bad road condition contributes to higher expenditure per km. It cannot be denied that the quality and condition of road surface in Calcutta had deteriorated much in 1973-74 from what they had been in 1962-63. This factor was, therefore, partly responsible for the excessive rise in expenditure for different cost components of the CSTC over years. But it is doubtful whether it is possible to ascribe the whole of the out-of-proportion rise in expenditure per km for different items in 1973-74 to worse road-condition alone. The point of declining efficiency in operation and management as a major reason for rise in expenditure per effective km is hard to avoid.

COST PER KM OF PRIVATE OPERATORS COMPARED

In the present context of fast rising expenses of the CSTC over years, a study of the operational costs of the CSTC as compared to the private operators would spotlight some important aspects of the loopholes through which the expenses are fast increasing. Also the degree of huge overheads in the total expenditure of the Corporation as compared to the little overheads incurred in private operation shall be analyzed to emphasize the nature of problems involved.

At present about 1500 private buses are in daily operation on 60 routes within the metro core. But the private buses do not run as a single or a few organized units; buses are owned by individual route permit holders and are operated often by the members of the owner driver's family. There are two Associations of Private Bus Operators—Bengal Bus Syndicate and Federation of Bus Syndicates. The Bengal Bus Syndicate was founded in the year 1925 and its function is mainly to arrange for supervision of every route by a Route Committee, consisting of a few elected members operating on that route, which is responsible for maintaining regular services on the route and which is recognized by the Regional Transport Authority (RTA). Later on, there came into existence another association, the

Federation of Bus Syndicates, with the object, *inter alia*, of working in co-operation with all other bus associations in different areas or regions and nominating representatives to those associations. These associations do not run their own buses and their expenses are incurred out of contributions obtained from member operators.

The principal difficulty in making any study of the cost-revenue position of private buses is that the private bus owners do not keep any book of account, nor even the ordinary cash-book or Jama-Kharach Book; they have no record of revenue and expenditure except what appears from their way bills.

However, the Federation of Bus Syndicates analyzed the cost statistics of private operators in Calcutta for the years 1964, 1970 and 1972 and worked out the operating cost of a private bus per km. Regarding reliability of these calculations, it may be noted that they were submitted by the Federation to the Banerjee Commission (1972-73) before which the Federation was representing for a rise in fare to cover the expenditure. Hence it may be expected that the cost calculation, at least for the year 1972, was not on the lower side (may be a bit inflated) than the actuals. We give below the operational cost of private buses along with the expenditure per effective km of the CSTC in order to have an idea about the comparable position of the two. We also depict in the Table, the average number of buses outshedded per day, fleet utilization ratio and effectiveness of outshedded vehicles of the CSTC for each year.

TABLE 6 OPERATING COST PER KM OF CSTC AND PRIVATE BUS
(in Paise)

	1964	1970	1972
1. Operating cost per km of Private Bus	108	184	235
	1964-65	1970-71	1972-73
2. (a) CSTC's Expenditure per eff. km (excl. Central Workshop.)	134	347	362
(b) Av. No. of Buses outshedded p/day	645	495	594
(c) Fleet utilization ratio	70.4	46.7	45.2
(d) Per cent of effective utilization of outshedded vehicles	86.8	67.5	75.8

SOURCES: Calcutta Gazette Extraordinary, 1973; CSTC Transport statistics.

It appears that in 1964-65, the operating cost per km of the CSTC was only slightly higher than that of private buses—say by about 24 per cent. This is tolerable in view of the welfare and overhead margin to be maintained by a public sector undertaking in its expenses. Moreover, a transport organization has to maintain a regular army of staff whatever the mileage

run by the vehicles and hence the cost per km will be high if there is a drop in the mileage run by the vehicles. Thus it can be said that there was a parity in operational expenses of the CSTC and private buses in 1964-65. But in course of only 7 to 8 years that parity was lost; by the year 1972-73, while the cost of private buses per km rose by 117.6 per cent, for the CSTC the rise was about 170 per cent. It is worth noting that there is one special point disfavours the cost position of private buses; they are often to patronize black market prices of various components and accessories which are about double the prevailing market prices, as there is no system of price control in this sphere. Had it been possible for the private operators to get regular supply of all spares at market prices, as the CSTC gets, their operating cost would have been still less.

The reason for rise in the expenditure for effective km for the CSTC at a much higher rate than the private operators, within a very short span of time, is not very far to seek. The fleet utilization ratio of the CSTC had declined very sharply over the period under reference and also there had been a steep fall in the effective utilization of outshedded vehicles during the same period. Lower fleet utilization ratio means that with vast overheads for maintaining a large fleet, there is only smaller number of outshedding and consequently smaller km length run by fewer vehicles would cause the huge overhead costs to be spread over smaller km length thereby making the average cost per km high. The decline in the effectiveness of outshedded vehicles further strengthens this point. As a large part of the operating cost of a public sector Transport organization is by nature fixed, the operating cost per km is bound to be high if the shedding as well as effectiveness of outshedded vehicles is low. This is what has exactly happened to the CSTC.

The size of a transport organization and the consequent economies and diseconomies of scale has some influence in its operating cost. A large scale transport organization, as the CSTC is, has no doubt many disadvantages but at the same time it has certain advantage too. These include economies from large scale purchase, specialization, etc. The private bus operators running on a small scale obviously do not enjoy these benefits, while they also reap some cost advantages such as non-existence of huge overhead which big operators do not.

At best, however, the huge difference between the operating cost of the CSTC and private operators, "particularly in the later year as noted in (Table 6), can be ascribed only partly to the diseconomies of a large scale transport organization but largely to the reasons causing lower fleet utilization and effectiveness of outshedded vehicles.

A COMPARISON OF COST ITEMS OF THE TWO AGENCIES

The operating efficiency of the CSTC over years may also be studied in

terms of the cost structure of each as percentage of total receipts for individual items of expenditure. The wide range of accurate data that are necessary to make any definite conclusion in this respect is neither available nor maintained at any level. Particularly for the private sector, the paucity of data is really deplorable. However, an attempt towards this end was made a few years ago. Information were collected from 21 operators who agreed to furnish their expenditure on various cost items as percentage of receipts for the whole year, but did not like to divulge the actual annual receipt and also did not want to get their identity disclosed.¹ In this light a comparison of the cost situation of the CSTC and the private operators was made for the year 1964-65. We give in Table 7, comparative position of the Private operators and the CSTC for the year 1964-65 and also depict the situation of the CSTC for the years 1976-77 and 1977-78 in the same light.

For the years 1976-77 and 1977-78, the detailed break-up of portions for all items of the CSTC is not available, but the important ones have been given. For analytical purposes, it will not be very unrealistic to assume that the break-up of total Depreciation between Buses and other Assets (items 8 and 9) would be proportionately not very different in 1976-77 and 1977-78 from what it had been in 1964-65. Accordingly, we assume Depreciation of other Assets out of total Depreciation (of buses and other assets taken together) to stand at 4.6 in 1976-77 and 5.3 in 1977-78 as per table showing expenditure items as percentage of total receipts. Some idea about the break-up of these two items, in particular, not given in the above Table is necessary for our present analysis and hence is the above assumption.

According to Table 7, the total expenditure of the CSTC for the year 1964-65 was in excess of its total receipts by 12.2 per cent (actually, this was by 13.1 per cent in the overall total expenditure as percentage of its total receipts for that year). For the private operators, as is evident from Table 7, this was less by 8.3 per cent.

Regarding the cost position of the private operators as percentage of total receipts for the years 1976-77 and 1977-78, it is assumed that it remained more or less the same as in 1964-65. Such assumption is warranted by the following reasoning.

It is seen that the distribution of the total receipts of private operators over different cost items in 1964-65 generated only a little surplus of the order of about 8 per cent only. That they earned some surplus in 1976-77 and 1977-78 can not be denied. The very fact that they are carrying on their business even today means that at least some profit margin is enjoyed by them without which they would have stopped plying buses on roads. This point is further reinforced by the findings of the Banerjee Commission which had computed, as we shall see later, the annual income and expenditure of a private bus in Calcutta for the year 1972-73 and noted that out

¹D.K. Halder, *Urban Transport*, Academic Publishers, 1977.

TABLE 7 EXPENDITURE AS PERCENTAGE OF RECEIPTS

Items of expenditure	Private operators 1964-65	Calcutta State Transport Corporation		
		1964-65	1976-77	1977-78
A. PAY AND ALLOWANCE OF				
1. Drivers	81.33	8.09 }		
2. Conductors	8.33	12.55 }	31.1	36.5
3. Cleaners	1.99	0.40 }		
4. General Administration (Accounts, Reports, etc.)	—	17.81	32.1	38.3
<i>Total Pay and Allowance</i>	<i>18.65</i>	<i>38.85</i>	<i>63.2</i>	<i>74.8</i>
B. COST OF MATERIALS				
5. Fuel and Lubricants	23.72	23.48	22.6	22.4
6. Stores, Spares, Tyres, Tubes, etc.	17.95	21.65	40.7	45.3
C. OTHER EXPENDITURES				
7. Interest	3.83	6.88	39.4	48.0
8. Depreciation on Buses	15.38	8.50 }		
9. Depreciation on Other Assets	—	2.02 }	18.3	21.0
10. Stationery	1.92	0.40 }		
11. Miscellaneous	3.21	3.24 }	7.0 }	
12. Insurance	1.92	0.92 }		13.1
13. Road Tax	5.13	4.45 }	2.7 }	
14. C.P. Fund	—	1.62	6.0	5.4
15. Audit Fund	—	0.40	0.4	0.4
16. Gratuity, Medical Benefits and other Funds	—	0.40	0.5	0.7
Total	91.71	112.21	200.8	231.1

SOURCE: D.K. Halder, *Urban Transport*, Academic Publishers, 1977; CSTC Transport Statistics; CSTC Official Records.

of a total annual income of Rs. 80,316, a private bus earned a net profit of Rs. 7890 or about 9.7 per cent. It is important to note here that this finding was made at a time when the private operators were complaining of severe losses in business and were clamouring for rise in fare rates.

Therefore, it is not improper to assume that the private operators distributed their total annual receipts over different cost items in 1976-77 and 1977-78 in such a way as to generate some surplus margin than what it had been in 1964-65. So far as the proportion for each item is concerned, even if there occurred some minor changes between the items in the later years as compared to 1964-65, such changes would not make the essence of our comparative analysis different. Under these circumstances, we assume the expenditure of each item, of the private operators, as percentage of total receipts in 1976-77 and 1977-78 to be the same as they

had been in 1964-65 and proceed to analyze comparable position of the CSTC in 1964-65 as also in recent years, viz., 1976-77 and 1977-78.

We find that a number of items incurred as expenses by the CSTC do not form part of expenditure of private operators. If these items are left out of consideration from the expenses of the CSTC also, it would be found that in the year 1964-65 there occurred a larger surplus for the CSTC than the private operators; but the position was altogether different for the years 1976-77 and 1977-78.

The following items do not enter into the expenditure accounts of the private operators:

TABLE 8 ITEMS NOT APPEARING IN THE EXPENDITURE TABLE OF PRIVATE OPERATORS

Item No. in the above Table (7)	Item	Percentage of Total Receipts as expenditure for CSTC		
		1964-65	1976-77	1977-78
4	Pay and Allowance of General Administration	17.8	32.1	38.3
9	Depreciation on other Assets	2.0	(assumed) 4.6	(assumed) 5.3
14	C.P. Fund	1.6	6.0	5.4
15	Audit Fund	0.4	0.4	0.4
16	Gratuity, Medical benefit and other Funds	0.4	0.5	0.7
Total		22.2	43.6	50.1
Total expenditure as percentage of Receipts in respective years		112.2	200.8	231.1

SOURCE : D.K. Halder, *Urban Transport*, Academic Publishers, 1977;
CSTC Transport Statistics and Official Records.

If these expenditures were excluded from the CSTC's accounts, then in 1964-65 it would have spent 90 per cent of its income (112.2-22.2) as against 91.71 per cent of the receipts spent by private operators in the same year. This indicates greater efficiency for CSTC. In addition, the private operators do not observe statutory regulations regarding hours of work, leave, dearness allowance, provident fund, gratuity, medical benefit scheme, etc. They employ only one driver and two conductors per bus for fourteen to sixteen hours per day, with some rest periods. As compensation they pay a high Commission on fare revenue and follow the principle of no-work-no-pay. The CSTC, on the other hand, has to employ 3 drivers and 6 conductors per bus in compliance of Motor Transport

Workers' Act increasing its total staff cost for drivers and conductors per bus. Apart from that, in case of private buses, small repairs are done by the drivers, conductors and cleaners themselves. Because of no-work-no pay principle the staff take great care for maintenance and repair to keep the bus running and hence the cost on that account is very low. All these differences would justify the CSTC's operational expenses to be a little higher than that of private operators. But yet, in 1964-65, the CSTC had a potentiality to earn greater surplus in its total receipts than private operators. This is no little credit for the CSTC.

But the position took a bleak turn in later years and its deficit gap went on widening. In 1976-77, we find that by dropping similar items from the CSTC's expenditure table, the total expenditure as percentage of its total receipts would stand at 157.2 (200.8—43.6); for 1977-78, the corresponding position was 181.9 (231.1—50.1). This means that the CSTC suffered a comparable loss to the tune of 57 per cent and 81 per cent of its total receipts in respective years as against an earning of surplus of about 10 per cent of its receipts in 1964-65.

Therefore, the operational efficiency of the CSTC had suffered serious setbacks during the years following 1964-65 and in 1976-77, though as we have already noticed, the operational efficiency had slightly improved with somewhat lower expenditure per effective km than the previous year (1975-76). Situation was yet far worse as compared to the 1964-65 level. In 1977-78 the operational efficiency again sharply declined from the 1976-77 level and expenditure per effective km as also the deficit gap rose up while the overall receipt fell perceptibly (Table 1 & 3).

However, a closer observation would reveal that the position in the last two years was not as unsatisfactory as it seems at first sight. The expenditure for the item 'Interest' accounted for 39.4 per cent in 1976-77 and 48.0 per cent in 1977-78 of total receipts in respective years, while in 1964-65, the corresponding percentage was only 6.9 per cent (Table 7). The increase in expense for Interest is not directly caused by any inefficiency in operation or management. Therefore, in considering the trend in financial performance of the undertaking over years, it will not be unjust to ignore the increase in expense for interest. Accordingly, if the percentage of expenditure (out of total receipts) for this item in 1976-77 and 1977-78 is assumed to remain the same as in 1964-65, then the total expenditure as percentage of total receipts in those two years would have been less by 32.5 (39.4—6.9) and 41.1 (48.0—6.9) respectively and the comparable percentage of total receipts incurred as expenditure in the two years 1976-77 and 1977-78 would have stood at 125.3 (157.2—32.5) and 139.9 (181.0—41.1) respectively as against 90 in 1964-65.

The position of 1976-77 and 1977-78 thus reduced to a comparable standard with 1964-65, it is found that the overall expenses (for items other than 'interest') as percentage of total receipts of the CSTC increased

in 1976-77 by 39 per cent and in 1977-78 by 56 per cent from the level of 1964-65.

GREATER PROPORTION OF TOTAL RECEIPTS OF THE CSTC SPENT FOR CERTAIN ITEMS IN LATER YEARS

In the last two years (1976-77 and 1977-78), the percentage of total receipts spent after the item 'Stores, Spares etc.' was about double of the 1964-65 level—from 21.05 in 1964-65, it rose to 41 in 1976-77 and 45 in 1977-78 (Table 7). This rise occurred when the total receipts of the Corporation had also doubled from Rs. 549 lakhs in 1964-65 to Rs. 1065 lakhs in 1976-77 and Rs. 987 lakhs in 1977-78 (Table 1).

It cannot be said that greater consumption of spares and stores in quantitative terms was needed by greater number of vehicles on road in the later years than in 1964-65; actually the situation in this respect was reverse, (Table 4).

In this situation, doubling of the proportion of expenses on the items 'Stores, Spares etc.' could have been considered due to rise in prices of these materials, if such prices had been quadrupled in the meantime. We have noted earlier that between the years 1962-63 and 1973-74 the percentage rise in prices for certain cost components of CSTC had been far less than the increase in expenditure per effective km. The inevitable conclusion, therefore, is that there had been much greater inefficiency in the management of spares, stores etc., in the later years than in early 60s.

Another great rise in the expenditure (percentage as proportion of total receipts) occurred in the item 'Pay And allowance' from 38.9 in 1964-65 to 63.2 in 1976-77 and 74.8 in 1977-78 (Table 7). This is partly due to higher bus staff-ratio which stood at 16.46 in 1976-77 as against 15.57 in 1964-65. But in this respect also we have noticed that the rise in expenditure on 'Pay and Allowance' per effective km between the years 1962-63 and 1973-74 had been far higher than the rise in average pay of the staff.

It follows that the sharp percentage rise in pay and allowance as proportion of total receipts can hardly be justified wholly by the rise in pay etc. alone. There must have been greater inefficiency in this sphere too in the shape of greater underutilization of manpower in recent years than in 1964-65.

One encouraging feature, however, is regarding the cost of fuel as percentage of total receipts. It was at par with the private operators in 1964-65 and has been almost in the same proportion even in recent years. The decline in outshedding and effectiveness of vehicles in later years along with the rise in total receipts may be taken to have been partly counteracted by the sharp rise in price of fuel over the period, particularly in the recent years; and partly because of adulteration and pilferage fuel in different depots.

PERFORMANCE OF A PRIVATE BUS

We will now undertake an analysis of the overall annual performance of a private bus in Calcutta in some recent years. Such an analysis was actually made by the Banerjee Commission for a private bus in Calcutta for the year 1972-73.

Each private bus is generally off the road for 4 days in a month for purposes of rest, cleaning, inspection etc. As such the total number of earning days for a private bus in a year may be taken as $26 \times 12 = 312$ days. The average daily earning from passenger fare for a private bus was stated to be between Rs. 238 and Rs. 248. On this basis, the average earning per private bus per day at that time was taken as Rs. 243. Accordingly, the total annual income from passenger fare for a private bus stood at Rs. $243 \times 312 = \text{Rs. } 75,816$. The average earning of a single decker bus of the CSTC stood at Rs. 265 at about that time.

This apart, there was earning of about Rs. 10 per day from luggage and the total annual earning from this head was taken as Rs. 3000. Further, considering that these buses also earn by way of chartered trips—at least once on an average every month at the rate of Rs. 150 per trip, the yearly income from this count came to Rs. 1800 or say 1500.

This much about the receipts side of a private bus. The details of expenditure and the income-expenditure account of a private bus for the year 1972-73 is given in Table 9.

In the absence of sufficient materials and detailed data, the above statement was made on the best judgement estimations or on basis of average figures liberally favourable to bus operators. Had it been possible to check up every item, the net profit of the operators would have been probably much greater.

It is relevant to mention here the view of the income-tax department on the net income of a private bus at about that time, *i.e.*, 1972-73. "Income from a new bus in the first year is assessed as Rs. 18000, after allowing all other expenditures excepting depreciation", which is allowed at the rate of 30 per cent on cost; in each subsequent year, income is reduced by Rs. 1000. Of course the bus-operators are very much dissatisfied with this process and the assessed amount of income-tax and complained of the 'summary' way of such assessment before the Banerjee Commission. But since the bus-operators submit assessment to the Income Tax department without proceeding through the legal process of protest against the assessment, it is reasonable to expect that the same is far more advantageous to them than assessment on paper book accounts.

The net profit of a private bus arrived from statement of income and expenditure for the year 1972-73 was far less than the assessment of income tax department, which would be rather less than the actual profit.

TABLE 9 INCOME-EXPENDITURE STATEMENT OF A PRIVATE BUS IN CALCUTTA FOR THE YEAR 1972-73

<i>Expenditure</i>		<i>Income</i>	
1. (a) Diesel oil @ 53 litres p/day @ Rs. 0.93 p. litre	7,800.00	1. Passenger Fare	75,816.00
(b) Mobile oil ... 14 litres p/month ... Rs. 3.20 p.l.	600.00	2. Carrying of goods	3,000.00
	—	3. Chartered trips	1,500.00
2. Driver's wage ... 11% of Fare collected	8,400.00		
3. 2 Conductors ... 11% (Jointly)	8,340.00		
4. Cleaner's wage ... Rs. 3 to 4 per outsheddng day—	8,340.00		
26 in a month, say Rs. 100 p.m.	1,200.00		
5. Garage Rent (No garage)	—		
6. Servicing (done at pump station)	—		
7. Subscription to route Committee ... Rs. 5 per outsheddng day 26, a month $26 \times 5 \times 12$	1,560.00		
8. Cost of Printing Tickets (assessed from varying evidences)	300.00		
9. Cost of Battery (1 Battery p.a.—Cost of Exide Battery given)	675.00		
10. Repair and spare parts (according to some, Rep. cost Rs. 14000 and spares Rs. 12000 p.a. except 1st year; according to some other, cost of both vary between 12000 and 12500 p.a.; according to still other it was between 2000 and 3000 p.a.—Average taken)	9,000.00	C/O	80,316.00

Continued

Expenditure	Income	B/F	
11. Overhauling (4 overhauling in 10 year life of a bus at the rate 1 every 2 years; cost of each overhauling Rs. 5000; Total cost 20000 2000 p.a.)	2,000.00		80,316.00
12. Cost of Tyres (Hiring rate p. day between Rs. 6 and 8, say Rs. 7 for 312 days a year— $7 \times 312 \times 6$ Tyres = Rs. 13345; cost of Nylon Tyre 1345; 6×1345 = Rs. 8070; Mean Taken)	10,000.00		
13. Insurance charges (comprehensive rate from 1-1-71—Rs. 426 plus $\frac{1}{2}$ % of Insurer's estimated value. Assuming a Bus costs Rs. 90,000 the charge for the first year is 426 plus 450 = Rs. 876; every year the estimated value falls by 10% and the total charge in each successive year is lower. Calculated thus, the total insurance charge in 10 years is Rs. 6735 or Rs. 673-50 p.a. Considering the non-claim rebate, the average annual charge payable is Rs. 500)	500.00		
14. Trade Licence	50.00		
15. Water Tax (only 50 buses paid)	—		
16. Bonus to staff (different amounts paid by different owners—assessed on an average)	500.00		
17. Taxes and Fees under MV Act:	<div>Amount</div> <div>Annual Amount</div>		
(i) Application fee (Payable once)	10.00		
(ii) Registration fee (Payable once)	100.00		
	110.00		11.00

(iii) Permit fee Rs. 250 for 5 yrs. Rs. 500 in 10 years	50.00
(iv) Certificate of fitness (annually)	20.00
(v) Road taxes Rs. 1980 for 33 seats and Rs. 30 for each additional seat; Normally a Private Bus 36 seater.	
Tax is 1980 plus 90 =	2070.00
	<hr/>
	2151.00

18. Depreciation (Normal life of a bus 10 years):

(a) Cost of a bus Rs. 90,000.00

(b) Bank Advance payable on average in 36 monthly instalments reckoned as 54000 for purchase of a new bus—10% Interest on average on capital advanced (Payment of instalments reduces the amount of loan to $54000 \div 2 = 27,000$ for a period of 3 years

	8,100.00	
	<hr/>	
Less: Scrap value 5%	98,100.00	Income
	4,500.00	Expenditure
	<hr/>	
Depreciation per year is ...	93,600.00	Net Profit
	$93,600 \div 10 = 9,360.00$	
Total expenditure	Rs. 72,426.00	

SOURCE: Culcutta Gazette, Extraordinary, 1973.

It is thus evident that a private bus in Calcutta earned in 1972-73, at least a nominal net surplus of Rs. 7890 or about 9 per cent of its total receipts. As against this, the situation for the CSTC in the same year was a net deficit of Rs. 609.39 lakhs with a serviceable fleet strength of 887. The average loss per bus would, therefore, comes to about Rs. 69,000.

SOME VARIABLE COSTS OF A PRIVATE BUS COMPARED WITH A CSTC BUS

A comparison between the operational efficiency of a Private Bus and the CSTC was attempted by the Association of Practising Cost Accountants in India, Calcutta in terms of a comparison between the expenditure incurred on items of variable cost of operation such as fuel, lubricants, spares, stores, tyres, battery, repairing and overhauling charges by each. The Association made its analysis for the year 1973-74 on the basis of anticipated expenditure of the CSTC as prepared by its Chief Accounts Officer for that year. Following the line of argument adopted by the Association, we may examine the comparable position of a CSTC bus with a private bus for the two years 1972-73 and 1973-74 on the basis of actual expenses for different items. We assume that the position regarding expenditure of a private bus remains unaltered in the two consecutive years 1972-73 and 1973-74.

Private buses being all single deckers, conversion of double decker buses of the CSTC into single decker ones is required for purpose of the comparison. The double decker buses, as we know, have 50 per cent more passenger carrying capacity than single deckers, and have therefore similar greater income earning capacity, though operational cost is only slightly higher. But to allow favourable margin to the CSTC, let us compute one double decker as equivalent to 1.5 single-deckers in so far as cost for different items under reference is concerned.

The CSTC buses plying on long distance routes are all single deckers. In working out the conversion of double deckers into single deckers, we have first of all to find out the number of double decker buses in the total number of effective buses on city routes in each year. The total number of effective buses on city and long distance routes in each year is available from the Transport Statistics of the CSTC. Here we assume that the distribution of effective buses on city routes between DD and SD would be in the same proportion as the composition of serviceable fleet strength, exclusive of the number of single decker buses plying on long distance routes. We now give in Table 10 the conversion into single decker buses of all effective buses of the CSTC in the two years 1972-73 and 1973-74. The conversion is ours.

TABLE 10 EFFECTIVE BUSES OF CSTC CONVERTED INTO SINGLE DECKERS FOR THE YEARS
1972-73 AND 1973-74

Year	No. of effective buses		Serviceable fleet		Distribution effective		DD = 1.5		Total No. of SD (converted)			Total col. 9+10+11
	city routes	long distance	SD	DD	buses on city route between	SD	DD	SD	long dist.	city	routes	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1972-73	439	11	614	273	302	137	207	11	302	207	520	
1973-74	370	20	398	522	161	209	314	20	161	314	495	

SOURCE: CSTC Transport Statistics.

Expenditure details of the CSTC for the items under consideration during the two years are given in Table 11:

TABLE 11 EXPENDITURE FOR SOME ITEMS OF THE CSTC

<i>Items:</i>	<i>(Rupees in lakhs)</i>	
	<i>1971-73</i>	<i>1973-74</i>
1. Fuel	120.28	113.79
2. Spares and Stores	118.58	105.78
3. Lubricants	14.20	19.71
4. Tyres and Tubes	46.13	61.44
5. Battery	4.14	3.53
6. Repair Works	18.31	33.48
Total	321.64	337.73

SOURCE: CSTC Transport Statistics.

We are to find out the expenditure of a private bus for similar items from the Table showing income expenditure statement of a private bus in Calcutta for the year 1972-73. These expenses are given below:

	Rs.	Rs.
(i) Diesel and Mobile Oil	—	8,400.00
(ii) Cost of Battery	—	675.00
(iii) Cost of Tyres	—	10,000.00
(iv) Repairs and Spares	9,000.00	
(v) Overhauling charges	2,000.00	
	11,000.00	
Less: for Labour Charges	3,000.00	8,000.00
	Total	27,075.00

The cost for different items, as calculated above, was incurred by a private bus which is on the road for 312 days a year in order to allow rest to the bus for some days every month and which earned at that time about Rs. 243 per day as passenger fare. As against this, an effective bus of the CSTC works for all the 365 days a year and earned at that time about Rs. 265 per day. Due weightage must be given to these variations in order to arrive at a comparable variable cost to be incurred by a CSTC single decker bus in terms of the above standard of expenditure by a private bus. The Association computes the standard variable cost for a CSTC

bus thus:

$$\frac{27075 \times 365 \times 265}{312 \times 243} = \text{Rs. } 34,600.00$$

But the actual expenditure on the relevant items per bus for the CSTC in the two years under review stood as—

$$1972-73 \quad \frac{\text{Rs. } 321.64 \text{ lakhs}}{520} = \text{Rs. } 61,853, \text{ say } 61,800$$

$$1973-74 \quad \frac{\text{Rs. } 337.73 \text{ lakhs}}{495} = \text{Rs. } 68,025, \text{ say } 68,000$$

The cost for similar items for a CSTC bus was higher than the standard in 1972-73 by (Rs. 61,800—34,600) Rs. 27,200, and in 1973-74 by (Rs. 68,000—34,600) Rs. 33,400.

The overall excess expenditure incurred by the CSTC for the items under reference over and above the standard variable cost calculated in this way—during the two years under study, as against the actual loss suffered by the undertaking comes to:

Year	Excess expenditure per bus (Rs.)	No. of buses	Total excess expenditure for these items (Rs. in lakhs) col. 2x3	Total loss (Rs. in Lakhs)	% of excess exp. for these items in Total Loss
1972-73	27200	520	141.44	609.39	23%
1973-74	33400	495	165.33	737.67	23%

It may, therefore, be concluded that the total loss of the CSTC in these years could have been reduced by 23 per cent if only effective control and efficient management of the consumption of fuel, spares, stores and all the various materials used by it could have been effected.

ITEM TO BE TREATED AS COMPARABLE OVERHEADS

We now turn our attention to the aspect of overhead expenses. Here the situation of the CSTC is almost incomparable with that of a private operator. The individual operators have neither to maintain a large staff and organization for general administration, nor a regular army of drivers, conductors and other running staff whatever be the number of Vehicles put on road per day. For the CSTC, actually the expenses for pay and allowance, etc., of the entire staff including Traffic, General Administration, Repair and Maintenance and the Central Workshop are almost wholly (excepting a small slice paid as incentive allowance and therefore

commensurate with work done) unrelated to the number of buses outshedd-ed. On the contrary, for an individual operator, payments made to the staff are, strictly speaking, variable costs in nature, being related to the revenue earned. Again, for private buses, the aspect of general administration on the operational side is looked after by the Route Committees for which an operator has to pay at the rate of Rs. 5 per outshedding day only. Essentially, this should be treated as a variable cost for a private operator, since the cost is not to be borne if there is no outshedding. He has no other cost for general administration, say, even for maintaining accounts, in as much as no such accounts are actually maintained except the way bills kept by the conductors.

However, to arrive at a comparable parity between the CSTC and an individual operator, we will treat the expenses of private operators towards subscription to route committees as general administration, and hence as an overhead cost. For the CSTC, we will exclude the payments made to the Drivers and Conductors, who are presumed to be directly connected with the running of vehicles from the total expenses for Pay and Allowance to find out its comparable overheads.

There are some other items of fixed costs for and individual operator. In our following analysis, the comparable overheads of a private operator would comprise of the following items:

- (i) subscription to Route Committee;
- (ii) depreciation including interest;
- (iii) insurance charges; and
- (iv) taxes and Fees payable under MV Act.

Let us now find out the items of expenditure to be treated as comparable overheads for the CSTC. The Employers' Contribution to Provident Fund is an item of expenditure borne by the CSTC but not by a private operator. Such payments are, however, wholly proportionate to the pay of the staff. In finding out comparable overheads, it is proper to treat such contributions as part of pay of the staff and find out the proportion of this contribution assignable for drivers and conductors to exclude the same from the overhead cost calculation. The proportion of total pay and allowance incurred for drivers and conductors would be considered as the proportion of the total C.P. Fund allocable for such staff.

Another item of payment made to the staff is Bonus. This poses an analytical problem. Private operator gives bonus as a lump amount depending upon the discretion of the employer or, at best, upon mutual settlement between the employer and employees. Whatever the process of arriving at the amount of Bonus for a private operator, it is really an overhead. On the other hand, for the CSTC Staff, bonus is paid as a proportion of the total pay received by the staff during a year. The basis

of payment of the same item Bonus, being, thus quite different in the two cases, its inclusion in either category of cost would cause some disparity. The principle of dividing the amount into two portions, namely, that payable to the drivers and conductors and that to the other staff—as is adopted for the item ‘contribution to Provident Fund’—is not an easy task in this case because that would require a further classification of the staff receiving salary above certain limit who do not get the bonus-benefit. However, the amount paid as Bonus constitutes only a very little proportion of the total expenditure in both the cases. For a private operator, as is evident from the Expenditure Statement of 1972-73 depicted above, it is something like 0.7 per cent (Rs. 500 out of a total expenditure of Rs. 72,426) and for the CSTC, since 1972-73, it has been around 2 per cent. In this situation, it is better to ignore the expenses for Bonus in the overhead expenditure calculation of both the Private operators and the CSTC, keeping in mind that if it were included, the overheads would have been slightly higher.

There are other items to be included into overhead costs for the CSTC. All in all, in the calculation of the comparable overheads of the CSTC, the following items small be included;

1. Expenditure under the head ‘Pay and Allowance’ excluding the portion incurred for ‘Drivers and Conductors’;
2. Employer’s contribution to the Provident Fund excluding that payable for Drivers and Conductors;
3. Contribution to other Funds;
4. Interest payable on loans and capital;
5. Road Tax and Registration Fees;
6. Audit Fees;
7. Rent, Rates and Taxes;
8. Depreciation; and
9. Other Contingencies.

One may argue at this stage that there are some other working staff, besides Drivers and Conductors, who are also directly related to production—such as staff for Repair and Maintenance, Central Workshop, etc. And to treat the pay for Drivers and Conductors as variable expenses rather than overheads would logically require the treatment of payment for those workers also as variable cost. But the fact that a section of drivers and conductors remain idle each day for non-outshedding because of breakdowns though they receive regular payments and that their pay and allowances are also treated as variable expenses may be considered to counteract the inclusion of the part of variable expenses (*i.e.*, the pay, etc., of the other staff such as those connected with Repair and Maintenance, Central Workshop etc.) into the overhead costs of the CSTC.

The overhead expenses of private operators as well as the CSTC may be expressed as percentage of total annual expenditure and of total annual receipts and some idea about the difference in magnitudes of the overheads of the two may be found out. The guiding indications about the overheads of a private operator shall be obtained from the computed Income-Expenditure statement of a private bus for the year 1972-73 as given above.

OVERHEADS OF A PRIVATE OPERATOR

Let us now find out the comparable overhead expenses of a private bus in Calcutta in the light of the above discussion. The relevant items along with the calculated percentages are given in Table 12 on the basis of the Expenditure Statement of Private Bus for the year 1972-73.

TABLE 12 COMPARABLE OVERHEADS OF A PRIVATE BUS

A. Overheads :			
1. Subscription to Route Committee	...	Rs.	1560.00
2. Insurance Charges	...	Rs.	500.00
3. Taxes and Fees paid under MV Act	...	Rs.	2151.00
4. Depreciation (including interest payable to Bank)	...	Rs.	9360.00
Total Overheads		Rs.	<u>13571.00</u>
B. Total Expenditure	...	Rs.	72426.00
C. Total Receipts	...	Rs.	80316.00
D. Percentage of total expenditure paid as overheads	...	18.72	say 19 per cent.
E. Percentage of Total Receipts paid as overheads	...	16.71	say 17 per cent.
F. Percentage of Bonus (Rs. 500) to the Total Expenditure	...	0.7	

The overhead expenses of a private bus considered in the light of the present discussion thus stands at 19 per cent of total annual expenses and 17 per cent of total annual receipts. This is exclusive of Bonus. Including Bonus, the percentage would be slightly higher.

COMPARABLE OVERHEADS OF THE CSTC

We will now find out the comparable overheads of the CSTC for some selected years, mainly in the recent past. We have to first allocate the portion of expenditure on pay and allowance assignable to the drivers and

Conductors. This we get from the records of the CSTC. Then deducting that portion from total pay and allowance each year, we would arrive at the portion to be treated as overhead. On the basis of the percentage of pay and allowance going for Drivers and Conductors we will find out the portion of the Employer's contribution to Provident Fund to be included into overheads.

We find that the percentage of pay and allowance spent for Drivers and Conductors in the different years under review stood roughly at 50—some years a little more, some years a little less (Table 13).

Accordingly, for the sake of simplicity, we take 50 per cent of total contribution to Employer's Provident Fund as the portion spent for drivers and conductors and the rest 50 per cent as overhead.

We may now proceed to find out the comparable overheads of the CSTC for the selected years (Table 14).

The overheads of the CSTC constitutes at present about 50 per cent about of its total expenditure as against 19 per cent for private operators. In 1964-65, the proportion of expenditure devoted for overheads was much less—only 37.5 per cent. In that year the financial performance of the corporation was also far better than it is at present. However, there accrued some deficit in the net results, but the total receipts could cover the whole of operating expenses and still leave some surplus to cover part of overheads.

It is admitted that a vast organization of the magnitude of the CSTC has some unavoidable overheads which a private operator does not have to incur. But the question is what is the tolerable extent of difference in overheads as proportion to expenditure between the two? Here it is not possible to find out any precise answer. But CSTC's expenditure on overheads which is more than 50 per cent of its total expenses as against only 19 spent by private operators seems to be on the excessive side. At least one thing is clear that in 1964-65, with much lesser proportional expenditure on overheads, the CSTC outshedded much greater number of buses per day than in later years when the proportion of overheads to total expenses increased enormously. This will be evident from Table 15.

The increase in the proportional burden of overhead expenditure along with sharp decline in the number of average outshedding of buses per day is a definite indication of under utilization of overheads, or, to put it in a different language, wastage of resources. Overheads are utilised only by the application of variable inputs; variable expenses being higher, the proportion of overhead costs in the total expenditure volume becomes lower. Since long the huge overheads of the CSTC have become incommensurate with the variable expenses incurred and hence the financial returns do not increase to the desired extent with the consequence of large deficits in trading results. Incidentally, it may be mentioned that the overheads of the CSTC including its running staff (drivers and conductors) were designed so

TABLE 13 PORTION OF PAY AND ALLOWANCE AND C.P. FUND TO BE INCLUDED INTO OVERHEADS

Items	(Rs. in lakhs)					
	1964-65	1972-73	1973-74	1974-75	1975-76	1976-77 1977-78
1. Total Pay and Allowance	207.9	502.8	535.7	552.9	594.8	672.3 737.6
2. Amount paid to Drivers and Conductors	109.9	253.4	265.3	276.9	290.2	330.8 360.0
3. Balance of Pay and Allowance to be treated as overheads	98.0	249.4	270.4	276.0	304.6	341.5 377.6
4. Percentage of Pay and Allowance for Drivers and Conductors	52.8	50.4	49.5	50.0	48.8	49.2 48.8
5. Contribution to Provident Fund	8.8	37.1	42.4	44.7	48.5	60.1 53.0
6. Assumed portion of Employer's Contribution to P.F. allocable as overhead (Less 50% for Drivers and Conductors)	4.4	18.5	21.2	22.4	24.3	30.0 26.5

SOURCE: (i) CSTC Transport Statistics

(ii) Official Records, CSTC.

TABLE 14 COMPARABLE OVERHEADS OF THE CSTC OVER YEARS

	(Rupees in lakhs)						
	1964-65	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
A. Overheads							
1. Pay and Allowance (Excl. portions of Drivers and Conductors)	98.0	249.4	270.4	276.0	304.6	341.5	377.6
2. Portion of CP Fund	4.4	18.5	21.2	22.4	24.3	30.0	26.5
3. Rent, Rates and Taxes	2.4	4.8	4.6	10.1	5.0	7.3	1.0
4. Audit Fee and Regn.	1.9	1.9	2.5	3.6	3.8	4.4	4.3
5. Road Tax and Regn.	21.4	22.6	21.4	18.0	18.8	21.7	21.0
6. Other Contingencies	18.1	41.0	43.1	52.7	60.0	78.6	64.0
7. Interest on Capital, Loans	30.5	168.9	208.8	260.2	343.6	419.5	472.9
8. Depreciation	51.1	112.6	128.3	144.2	161.0	194.8	207.8
9. Other Reserve Funds	5.6	5.5	5.3	3.9	5.4	5.3	7.4
Total	233.4	625.2	705.6	791.1	926.5	1103.1	1182.5
B. Total Expenditure	620.9	1250.0	1363.2	1556.7	1795.9	2179.8	2281.3
C. Total Receipts	548.6	540.6	625.5	617.9	798.4	1065.0	985.9
D. Percentage of total Expenditure as overheads	37.5	50.1	51.7	50.8	51.6	50.6	51.8
E. Percentage of total Receipts as overheads	42.5	97.6	112.7	128.0	116.0	103.5	119.9
F. Bonus	24.6	31.3	33.3	18.3	—	41.0	44.8
G. Percentage of total Expenditure spent as Bonus	4.0	2.5	2.5	1.2	—	1.9	1.9

TABLE 15 COMPARABLE OVERHEADS OF CSTC VIS-A-VIS FLEET UTILIZATION

Year	% of overheads in Total Expenditure	Average No. of Buses outshedded per day		
		city routes	long dist.	total
1964-65	37.5	645	—	645
1972-73	50.00	583	11	594
1973-74	51.7	533	20	553
1974-75	50.8	489	26	515
1975-76	51.6	506	32	538
1976-77	50.6	553	55	608
1977-78	50.3	508	66	574

as to attain a daily outshedding of 750 buses. Decline in the outshedding figure far below the capacity of 750 is a definite curb on its financial prospect.

So far as the comparable overheads as percentage of total annual receipts is concerned, in 1964-65 for the CSTC, it stood at 42.5 and in recent years at more than 100 per cent. For the private operators, it was 17 per cent.

A FEW WORDS ABOUT REVENUE EARNING

A few words about the revenue aspect of the CSTC may not be quite out of place here. Since December 1973, the passenger fare rates have been thoroughly revised and the last change in the fare structure in Calcutta occurred in August, 1975. At present, the minimum ordinary fare for a distance of 7 km is 20 paise and the highest fare stands at 40 paise for a distance of 19.6 km. These are ordinary fare rates. Apart from these, there are Express or Limited stop services in different routes charging an extra fare of 5 paise at each stage. Also, there are De-Luxe Services designed as Special Services carrying only sitting passengers with a minimum fare of 50 paise and a fare rate of 10 paise per km. For the long distance routes, except the Ranchi Service, the fare rate is 5 paise per km. For the Ranchi Service, the rate is 6 paise per km.

It is complained by the CSTC that the fare rates of the CSTC being for less than those prevailing in many other big cities, its revenue earning can not be augmented. But at the same time, it can not be overlooked that the degree of overcrowding experienced in the buses of Calcutta is conspicuously absent in most other big cities of the country. The number of passengers carried by the mass transit vehicles in the city during peak hours often reaches about 200 to 300 per cent of normal carrying capacity and except only a few hours in the early morning and late night,

buses are always overcrowded. Considering the fact that in many other city services of the country actually no standing passengers are allowed, it must be accepted that the greater number of passengers carried by buses in Calcutta do offer an opportunity of earning more fare revenue. Terrible overcrowding in buses as it occurs in Calcutta, has much adverse effect on life and serviceability of vehicles as it increases their wears and tears. This is an effect on the cost side. But so far as revenue earning is concerned, more passengers mean potentiality for greater revenue income. It is not unreasonable to take the excessive volume of passengers carried by Calcutta buses to be a factor compensating, at least partly, the lower fare rate prevailing in Calcutta as compared to other big cities of the country. Actually, the revenue earned per km in the CSTC cannot be said to be rather low as compared to other State Transport undertakings in India. According to Statistics published by the Maharashtra State Road Transport Corporation (1974), the revenue per km for some undertakings in the year 1971-72 given in Table 16.

TABLE 16 REVENUE PER KM OF SOME TRANSPORT UNDERTAKINGS
(1971-72)

BEST, Bombay	—	184.57	paise
DTU, Delhi	—	117.06	„
Gujarat SRTC	—	150.63	„
Maharashtra SRTC	—	144.05	„
Rajasthan SRTC	—	120.00	„
Haryana SRTC	—	119.60	„
CSTC, Calcutta	—	229.00	„

Evidently, the CSTC occupied the highest position in the list. However, CSTC's own Transport Statistics puts its Revenue and Expenditure per km excluding Central Workshop for that year at 179 paise and 428 paise respectively, while the Maharashtra SRTC's published comparative table put the respective figures by adding 50 paise at 229 and 478 paise presumably inclusive of Central Workshop. Even if CSTC's own record is accepted, taking revenue per km in 1971-72 to be 179 paise, we find that it stood at the second highest position following closely the BEST of Bombay for which the revenue per km was 184.57 paise. All this is quite good. But it does not prove that the efficiency of the CSTC in respect of earning revenue can not be questioned. Rather the fact is otherwise.

In the matter of collection of fare, there is a huge loophole in the CSTC. The evasion of fare takes various shapes in the CSTC, such as non-payment by passengers in a crowded bus, non-issue of tickets to passengers paying fare and leaving in a hurry, an understanding between

passengers and conductors to the effect that the former would pay less than the scheduled fare for destination while the latter would not punch ticket. Whatever the form of revenue leakage, the net effect is all the same—loss of revenue.

There is a large supervisory staff in the Corporation for checking tickets, but they are rarely found in buses. It is unfortunate that the CSTC authorities are rather indifferent to revenue leakage and hold that such leakage should be treated as element of cost. It is difficult to calculate precisely the loss suffered by a transport organization through revenue leakage. For the CSTC, various attempts have been made to arrive at some idea about the magnitude of the same. In 1964-65, a survey of unbooked passengers revealed that the percentage of such passengers stood at 22.4 of the total number of passengers.² Again an Evaluation Committee, set up by the Govt. of West Bengal, Finance (Audit) Department, to study the working of the CSTC in 1967 observed that “evasion of fares may be presumed to be 15 to 20 per cent of total fare collection.” Further, in January, 1975, a traffic survey conducted by the investigators of the Das Commission (1974-75) at five important routes revealed that the average minimum revenue leakage was of the order of 37.32 per cent.

Since September 1975, the CSTC adopted the system of pre-booking of passengers before the starting of buses; this has obviously reduced the degree of revenue leakage. But it is too much to expect that the leakage has been so reduced as to be considered negligible.

As against this, the position of the private operators is quite commendable. The members of the Banerjee Commission (1972-73) while travelling incognito several times in buses run by both the State Transport Corporation and the Private Owners formed the opinion that “collection of fare from passengers even in peak hours is almost perfect in private busees. . . . In State Buses Conductors are apathetic”. The reason of this is also clear. The Conductors of the private buses work on purely commission basis and larger the collection, greater becomes their income, while on State Buses, Conductors work on salary basis. It makes no difference for them whether they strain their utmost or stand idle while on duty. However, recently some incentive allowance for greater collection is given to them and this is expected to improve the situation somewhat.

All in all, private operators being individual units of small size have to incur little overheads and have almost nil unutilized investment in their units; their operating expenses are low and collection machinery is perfect. These factors help them in earning some surplus over and above their expenditure. In contrast, the CSTC has to maintain a huge overhead, the proportion of which in the total expenditure has increased enor-

²D.K. Halder, *Urban Transport Problem*, Academic Publisher, 1977.

mously over years; owing to inefficient management, the operating expenses too are very high and the fare collection also suffers from serious snags. The combined result of all these is ever-increasing deficits for the undertaking.

□□

*Organizational Structure of Hyderabad Urban Development Authority: Problems and Possibilities**

RATNA NAIDU

THE GROWTH of Hyderabad over more than three hundred and three-score years became of a sudden hurried and ungainly with the initiation of wide-ranging political changes affecting the city in the 1941-51 decade. Unlike other metropolitan cities in India, Hyderabad opened the floodgate to migration relatively late. The integration of Hyderabad state with the rest of India during the 1941-51 decade removed restrictions on in-migration to the city and during that decade the proportion of migrant population more than doubled. From 11.6 per cent in 1941 it increased to 27 per cent in 1951. The decadal records show that the migrant population has stabilized now at a quarter of the city population. Further by the end of the fifties, the city's new status as the capital of the Telugu speaking people drew into it a population of a different socio-cultural mix relative to the historic core.

The wide boulevards, the shimmering lakes, and the social and physical infrastructure built in a gracious era and for a population of less than 5 lakhs, now cover under an avalanche of population (17.96 lakhs in 1971) for whom little planned account seems to have been taken by the civic authorities. The problem seems to have been the lack of the evolution of organization structures with capacities for disseminating civic responsibilities appropriate to the growth of the city in the new political and economic contexts.

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A shorter version of the concept 'rurban ring' around a metropolis was published in Hyderabad edition of *Indian Express* on May 26, 1978. That article was titled "Case for Rurban Ring" and was written in the context of the State Government's decision to bifurcate Hyderabad into Hyderabad rural and Hyderabad Urban districts.

The Municipal Corporation of Hyderabad (MCH) seems to have mainly a maintenance function. The major road network, the arteries and skeletal framework of a city, the lakes and the important buildings which have determined the city image in such a definite manner, the currently functioning sewerage and water capacity system, all these were developed before even the city governing-body was given a statutory basis (1933)¹.

The initiation of an urban authority specifically geared to development functions in 1975 (the Hyderabad Urban Development Authority, henceforward to be referred to as HUDA) could and should have been a life-saving measure for the twin-cities in the new economic and political contexts. As the capital city of a relatively prosperous state there are a number of employment generating investments in and around the city which are attracting people from all over the country. Apart from industries and the galloping informal sector, numbers of research and educational institutions sponsored by the state, the center and even an international agency have been established within the urban agglomeration. While the investment necessary for the establishment of these industrial and other establishments are quickly made, the social and physical infrastructure necessary for those employed there are postponed. Since most of these new institutions require specialized skills, the employees are recruited from all over the country. These new recruits sponge on the already meagre stock of city housing and the social and physical infrastructure created decades earlier.

HUDA's organizational capacity to cope with these enormous problems of city growth seems wholly inadequate. The problems seem to be, in part, in the internal organizational structure of HUDA and, in part, in the manner in which it is plugged to the overall political authority of the State Government. In the following section we present a critique of HUDA's organizational structure. In Section II, we discuss the problems of administering the Hyderabad Urban Agglomeration beyond the municipal boundaries which are also under HUDA's jurisdiction.

I

CRITIQUE OF HUDA'S ORGANIZATIONAL STRUCTURE

The functional imperatives of any metropolitan government require

¹Until 1869 the Kotwal-e-Balda, the City Police Commissioner played also the role of the Chief City Magistrate as well as the City Municipal Commissioner. The Kotwal was appointed by the Nizam. In 1869 a Department of Municipal and Road Maintenance was created in the Miscellaneous Ministry of the Government. A Municipal Commissioner functioned under the Department. The City Governing Body was accorded a statutory basis only in 1933. In that year the Hyderabad Municipal Act gave the city municipality the status of a Corporation with elected representatives.

that three essential principles or processes are ensured free-play. The first involves the problem of achieving coordination between the many agencies involved in developments in the metropolitan area. The second is the process of collection and storage of information about the metropolitan area so that planned development is based on maximized intelligence. And the third is the problem of ensuring democratic principles in decision-making since they inevitably impinge on private property, sentiments and welfare, as well as the compromises involved in the maximization of social welfare of the civic community as a whole. As of now, both the organizational structure of HUDA itself and HUDA's nexus to the total decision-making process which determines events in metropolitan planning are such that the principles mentioned above exist, if at all, in the most attenuated form. We take up first the organizational problems of HUDA² in the context of these three essential functional imperatives of metropolitan government.

With respect to the problems of coordination, HUDA functions under limitations which are at two levels. First, whatever may be the *de jure* position, HUDA's *de facto* linkage to political authority is not broad-based and strong enough for promoting creative coordination between the different elements of urban phenomena and the relevant agencies that are responsible for them. The authority structure of the Government accords HUDA equal status with several other organizations, such as the Municipal Corporation of Hyderabad, the Housing Board and so on which are also providing service to the metropolitan area. These organizations are linked to political authority through a single Secretary (the Secretary to Government, Housing, Municipal Administration and Urban Development Department) who in turn is responsible to two Ministries (the Minister for Housing and Youth Services and the Minister for Municipal Administration, including Urban Development Authorities, Environment, Pollution, Sanitation).

The urban government organizations other than HUDA are old established and have exercised authority in well-defined sphere for many years. HUDA is a new-comer to this net-work of agencies and has to compete with them and lobby to extend its sphere of authority and influence. Indeed, a single Secretary being responsible for several organizations and being responsible to two Ministers each having its own sphere of authority and influence should inevitably push him into balancing acts. For, in a situation where old-established multi-functional organizations have not shed concerns which should be the concern of newly instituted organizations, it will be natural for each organization and Ministry to act as though it had its own client and objectives. But these organizations in

²A brief description of the internal organizational structure of HUDA is given in the Appendix.

fact have similar objectives and cater to the same public. For instance, not only does HUDA, the MCH, the Housing Board each have their own programmes of slum rehabilitation, but they compete with each other to obtain finance for their programmes from local, central and even international agencies. The rationality-frame of the balancing acts of the Secretary in-charge of urban government in such a situation cannot, therefore, be of the same order as the rationality frame which would recognize complexity and relatedness in society and city and which, therefore, results in relatedness in policy. Policies should evolve so as to serve compatible rather than competitive objectives of different civic authorities. It is necessary, therefore, that the functions and objectives of the different civic-authorities should be defined clearly so that these reinforce each other, and are amenable to a policy frame which is the result of coordination and integration.

A policy frame for the development of Hyderabad can only be expected to evolve out of HUDA's activities in coordinating and integrating the development plans of the various sectoral authorities such as transport, health, water, the directorate of school education, and housing board and so on. However, HUDA can play this role effectively only if it is given first place in the hierarchy of organizations operating in the metropolitan area. This is possible if the political basis of HUDA's authority is legitimized at the highest level. As of now, the Chairman of HUDA has the rank only of a Minister of State. Hyderabad being the capital-city, the development plans for its growth and well-being, certainly deserve the patronage of political authority at the highest level. There should not be any possibility of decisions taken by the highest authority in HUDA being countermanded by any other authority in the state. For this reason it is suggested that it is essential that the Chief Minister should be the Chairman of HUDA and the Vice-Chairman could continue to be a high-ranking official from the Secretariat.

HUDA's capacity for coordinating the activities of all the agencies involved in urban development is limited at a second level, that is at the level of its own organizational structure and process. There are no in-built antenna in its organizational structure which could scan the activities of all the agencies operating in the metropolitan area. There are more than a dozen government departments and autonomous agencies which are active in the metropolitan space. Out of these, only three (the Special Officer of MCH, the Chairman of Andhra Pradesh Housing Board, and the Managing Director of Andhra Pradesh Industrial Infrastructure Corporation) are represented in HUDA. It is argued that if a larger number of representatives of other organizations were invited to become members of HUDA, they might merely put brakes on uninhibited and creative functioning of the HUDA, since each representative would try to push the vested interest of the organization he represents rather than assist HUDA

to perform tasks for which it was created. In this context, the competitive element in the relations between HUDA and other organizations should be remembered. Since there is possibly some substance in this argument, we would like to suggest that HUDA should have functional advisory groups and/or development sub-committees for each functional area such as health, education, and so on. At the minimum, joint-director level persons from the directorates of the functional areas should be represented in the relevant development sub-committees. Such a person would have immediate knowledge and authority with regard to planning in that area. All planning involving space in the metropolitan area, whether it involves a school building, a hospital, or decisions more trivial such as the location of an auto-rickshaw stand, should be cleared and sanctioned by HUDA. At the same time HUDA has to be sensitive to the problems of each functional area and such sensitive orientation to problems can only emerge from information and debate with persons in authority in each functional area. Thus, it is suggested that development sub-committees in each functional area should exist under the rules of the Metropolitan Act, and attendance to the committee meetings and presentation of development plans (whether of HUDA or the organization representing a particular functional area) should be mandatory under the rules. Decisions taken at these meetings should be binding on all the parties concerned.

The close interaction of officers of HUDA with the representatives of the planning cells of the functional areas of city development-sanitation, education, recreation, etc., would heighten intelligence about the city. However it is essential that HUDA itself should strengthen its planning wing by creating its own data bank and monitoring unit. Demographic projections, requirements of functional areas, migration data, socio-economic profiles of segments of the population and so on, should be stored in the data archives. But this continuous data analysis and monitoring wing of HUDA requires only technicians. It is felt that it would be a mistake to expand the scope of such a planning wing so that it needs to absorb high ranking academicians and researchers. Even for evolving policy proposals, it is better to make available the resources of the data bank to research scholars and outside technical experts and thereby induce recommendations. This way one can utilize creative and original minds which HUDA with its own limited resources would not find it possible to harness. The problems of our future are complex and intractable and should not be left to technicians alone. Indeed, one might suggest that minds most philosophic, objective and abstract, and underlined by a broad humanitarianism should grapple with the problems of our exploding cities. The policy implications, therefore, should not be allowed to emerge merely from the data analysis in the planning wing of HUDA in particular, or in general from the different government departments.

There is a trend for policy information to become more and more the

property of officers and specialists within urban government.³ We have suggested that there is need to anchor these policies to the broader perspectives available to the scientific and scholarly community. Equally we would like to suggest that policies should be rooted in feelings, sentiments, rights and preferences of the communities for whom they are designed. This issue brings us finally to the last functional imperative of metropolitan government, namely, that the character of its viability will depend on the support it receives from people's representatives.

Here again, we find that HUDA's present organizational structure and process suffers from limitation since it is impermeable to pressures from felt needs and preferences of the community. Except for the MLAs who are members of HUDA, no representatives of local governments are members of HUDA simply because representative government at the local level ceased to exist some years ago. Panchayat and municipal elections have not taken place since 1970. This is unfortunate. As pointed out by the Redcliffe-Maud Report on Local Government in England "...no amount of administrative efficiency could make up for the loss of active participation by capable, public spirited people, elected by, responsible to and in touch with those who elect them"⁴.

The professional and/or the administrator and the people's representatives need each other since interaction between them nourishes the roots of urban government. Certainly, when local government elections do take place, HUDA will have to make room in its authority structure for representatives from those elected.

The crux of the problem of public participation in planning is that a confidential element in its process and an element of surprise in its announcements is necessary so that the planning process may not be paralyzed by pressures of vested interests. Indeed there is always the potential for corruptive impact on officials in interacting with the citizens on problems of planned development.

One way out is, of course, to identify the interest groups themselves and to some extent foresee the pressures, and thereafter to enter into debate (at least for local development plans), so that solutions which are minimally acceptable to all segments of the population may be found. Some communities are already organized, such as slum dwellers who have representatives; other group interests could be identified *a priori* by the planning wing. The different income groups, women, students, and so on, should be invited to express their problems, aspirations, [and preference for plans of development in their locality. It is suggested that for these purposes, the scope of the existing public relations cell could be deepened and differentia-

³Cynthia Cockburn, "Urban Government" in Gordon E. Cherry (ed.), *Urban Planning Problems*, Leonard Hill Books, London, 1974.

⁴Royal Commission on Local Government in England (the Redcliffe-Maud Report), HMSO, 1969, p. 60.

ted. The existing public relations cell seems to be mainly engaged in disseminating information about the city, HUDA's policies and programmes, and also information of image-building nature through exhibitions, press notes conferences and advertizing work. The existing public relations cell does not have any mechanism for feedback from the public. The public relations department should not only advertise the aims and objectives and broad framework of local development plans, but should invite criticisms, suggestions and creative participation from citizens in things such as the location of a school building, its management and philosophy, or the location of a park and pass these on to the planning wing, and/or organize meetings between the officers of the planning wings and the public. Thus, this cell could process the citizen's participatory input and could become a buffer between the planning wing and the public. This way the citizens' creative participation can be harnessed, and at the same time planning officers can remain a little aloof from public without becoming completely isolated from the communities for whom plans are formulated.

II

GOVERNANCE AND ADMINISTRATION OF THE PERIPHERAL AREA: THE CASE FOR RURBAN RING

The peripheral area in this context refers to the area beyond the Municipal boundaries of Hyderabad, but within the jurisdiction of the Urban Development Authority. The Hyderabad district comprises an area of 7753 sq. kms with a population of 27,91,762 with 1106 revenue villages (1971 census). The district has 401 Gram Panchayats with 6 Panchayat Samitis.⁵ The Hyderabad development area which is under the jurisdiction of HUDA is a much smaller area extending to about 600 sq. miles and is administered locally of course by Panchayats. Out of the 8 Panchayat samitis of the Hyderabad district, only 3 Panchayat Samitis, *i.e.*, Hayatnagar, Medchal and Rajendranagar and one Panchayat, *i.e.*, Pattancheruvu from the neighbouring Sangareddy Taluq of Medak district comprise Hyderabad development area. Not all the villages of these blocks are included but only about 303 villages (39 of which are uninhabited) come under the purview of the development area. It is worthwhile to recall that the Hyderabad development area was drawn on the basis of extensive studies conducted by the Town Planning Department and those conducted by Professor Manzoor S. Alam *et al* in the Department of Geography at Osmania University.⁶ The boundaries were delineated on the basis of social,

⁵Hyderabad Zila Parishad Statistics, Andhra Pradesh Government 1975, p. 11.

⁶S. Manzoor Alam, *Metropolitan Hyderabad and Its Region: A Strategy for Development*, Asia Publishing House, Bombay, 1972.

economic, ecological and such other considerations.

The basic problem of administration in this area is the inadequacy of Panchayat Raj bodies to cope with the volatile growth which is inevitable around a metropolitan city. The Panchayat Raj bodies are basically oriented towards rural development and agricultural growth and are not really expected to provide answers to the peri-urban problems of the fringe beyond the municipal limits. The 114 Gram Panchayats which administer the 303 villages in the Hyderabad development area are getting small proportions of grants-in-aid from the State Government. Recently this amount was raised from 26 paise to Re. 1 per population head. Even then, the Gram Panchayats find it extremely difficult to provide services to its people. It is clear that they are financially too weak to provide basic services in the rapidly urbanizing area. Nor do they have the resources, legal, technical or organizational, to prevent haphazard growth in complete defiance of all norms of land-use control.

The crux of planning for the urban fringe beyond the municipal limits is the problem of containing the tentacular form of urban spread.⁷ As suggested by the word tentacular (from the word tentacle, some thing which by grasping or feeling out explores and moves), the urban expansion beyond the municipal limits is not easily amenable to control. Location of industries with Central and State Government subsidies (as in the north-west peri-urban region of Hyderabad), State Government investment in proposed ring-towns, mushrooming of rice-mills along the highways leading to newly created rice-bowl in the command areas, new cross cutting roadways provide the nodes around which strings of shops and houses develop. Land values begin to soar and house-plots develop because land is still cheaper than within the municipal limit. At first urban type encroachment is on uncultivated dry land with prospects of sinking wells, but with galloping tentacular growth, encroachment on the finest agricultural tracts begins.⁸

The point that we need to underline is that the ideological basis for land-use control beyond the municipal limits is entirely of a different nature from that of land-use control within the city. The ideological basis of land-use control beyond the city limits could be summarized and stated as follows:

- (1) The need to conserve rural land around a city to provide ecological balance and prevent ruthless encroachment on agricultural land and thereby ensure food supplies, especially of the garden variety to the city population from easy distances.
- (2) To stop the indiscriminate scatter of the

⁷Peter Hall, *Urban and Regional Planning*, Penguin Books, Ltd. Harmondsworth, Middlesex, England, 1974, p. 34.

⁸For case studies, see, V.L.S. Prakasa Rao, *Towns of Mysore State*, Indian Statistical Institute, Calcutta, 1964.

city population far beyond the physical capacities for commutation and communication.

Thus it is obvious that there is need for an administrative structure committed to the protection and development of agriculture around the metropolis. At the same time we find that the Panchayats are institutionally too weak to withstand the powerful market forces which emanate from the metropolis and thereby threaten to wipe out agriculture; nor are they able to service the emergent urban tracts.⁹

The traditional approaches to the problems of urban fringe have been rather defeatist (or merely careless). Indeed, we in India have never recognized the need for battles over green-belts around the metropolises. As a rule the city-fathers have found two solutions to the urban fringe. First, the outright inclusion of panchayat towns within the metropolitan city. The second, the creation of new towns under the Municipalities Act and/or the declaration of the urban nodes around the metropolis. Note the dismal and monstrous stretch of the Calcutta conurbation consisting of 36 municipalities and Notified Areas.

We should like to suggest a departure from these traditional approaches to urban nodes around a metropolis. The main basis of our approach is to ask how can we conserve the rural areas which are within easy distance from the metropolis (or in other words, how do we ensure a green-belt around the city)? At the same time how do we create the administrative infrastructure necessary for the control of the urban nodes around the city? In answer to these questions we suggest the creation of 'rurban'¹⁰ authorities around the metropolis. The term rurban is usually used in sociology as an area in transition from rural to urban mode of settlement. In our usage the term rurban authority indicates the desire to freeze this transition stage.

⁹The need for the creation of organizational structures which can administer regions with mixed, rural and urban land-uses has been considered by two high-powered central committees, namely, (1) Committee on Urban Land Policy (see, *report of the Committee on Urban Land Policy*, Ministry of Health and Family Planning, Government of India, 1965); and (2) Committee on Rural-Urban Relationship (see, *Report of the Rural Urban Relationship Committee*, Ministry of Health and Family Planning, Government of India, 1966).

The report of these committees are important because they underline the organic linkages between rural and urban areas. But they fail to give an answer to the problem of administrative integration which has become vital especially in the fringe area around large cities. The measures recommended by these committees, district level planning, creation of coordinating statutory authorities with representation from rural and urban local bodies, etc., do not provide effective answers to the problem. The very existence of two types of local authorities, with two types of personnel to control and develop communities which are functionally, spatially and organically linked, has created contradictions which cannot be resolved by linking them through a third authority structure.

¹⁰The word 'rurban' was first used by C.J. Calpin in his *The Social Anatomy of an Agricultural Community*, University of Wisconsin, Agricultural Experiment Station, Research Bulletin 34, Madison, University of Wisconsin Press, 1915.

Contiguous urban authorities should form a ring around the city and try both to contain it and act as a buffer between the state-capital and the rural towns.

We suggest that five rural authorities could be created out of the region which is under the jurisdiction of HUDA. We have delineated these on the basis of the planning zones already worked out by HUDA. The planning department of HUDA has divided the peripheral area into 18 planning zones (see Table 1). We select 5 prominent urban nodes and have agglomerated the planning areas around these to form rural regions. These five are Medchal, Ghatkeswar, Ramchandrapuram, Shamshabad, and Hayatnagar. These could be the headquarters of each region and the Rural Authorities could also be named after them. Tables 2 and 3 indicate land-use pattern, population and existing infrastructure in these regions. We suggest only five rural authorities so that administrative costs can be kept as low as possible, keeping also in mind the requirement that headquarters should not be at too long a distance from the outer rim of the region. The infrastructure of the currently functioning block-headquarters could be converted and enlarged (for instance, personnel to cater to urban services would have to be added to the usual extension service men of the

TABLE 1 SELECT DATA ON THE 18 PLANNING ZONES FOR THE PERIPHERAL AREA OF HYDERABAD DELINEATED BY HUDA

<i>Sl. No.</i>	<i>Name of the Zone</i>	<i>Zone No.</i>	<i>No. of villages falling within zone</i>	<i>Area in sq. miles as per 1971 census</i>	<i>Population as per 1971 census</i>
1.	Dundigal	I	6	18.56	5,501
2.	Medchal	II	13	25.32	16,000
3.	Shambupur	III	26	59.17	23,573
4.	Kukatpally	IV	30	44.33	64,434
5.	Shamirpet	V	13	29.08	16,027
6.	Keesara	VI	13	34.27	13,801
7.	Moulali	VII	6	14.14	41,146
8.	Chengicherla	VIII	20	26.29	22,927
9.	Ghatkeswar	IX	17	37.37	22,597
10.	Hayatnagar	X	36	37.74	31,119
11.	Nadergul	XI	5	16.72	9,615
12.	Kothapet	XII	18	21.16	10,294
13.	Shamshabad	XIII	21	31.28	16,996
14.	Budvel	XIV	19	31.18	19,316
15.	Himayatnagar	XV	9	23.51	11,586
16.	Popalguda	XVI	21	26.86	11,795
17.	Kollur	XVII	11	37.02	14,218
18.	Ramachandrapuram	XVIII	23	54.73	36,457
			307	568.73	3,87,408

TABLE 2 LAND-USE PATTERN, TYPES OF INDUSTRIES AND

<i>Zone No.</i>	<i>Name of the Zone</i>	<i>Population</i>	<i>Residential</i>	<i>Com- mercial</i>	<i>Industrial</i>	<i>Transport communi- cation</i>
II	Medchal	16,000	107.36	—	—	40.75
I	Dundigal	5,501	40.21	—	—	43.11
III	Shambhupur	23,573	118.47	—	—	100.71
V	Shamirpet	16,027	81.50	—	—	64.17
Total		61,101	347.54 (0.80)	—	—	248.74 (0.58)
IX	Ghatkeswar	22,597	201.91	—	2.34	105.92
VII	Moulali	41,146	132.04	—	270.98	300.20
VI	Keesara	13,801	86.43	—	—	54.03
VIII	Chengicherla	22,927	580.39	3.15	274.06	53.04
Total		1,00,471	1,000.77 (2.61)	3.15 (0.01)	547.38 (1.43)	513.19 (1.39)
X	Hayatnagar	31,119	461.56	7.65	73.79	107.23
XI	Nadargul	9,615	27.76	—	—	16.79
XII	Kothapet	10,294	75.31	—	—	5.26
Total		51,028	564.63 (2.20)	7.65 (0.03)	73.79 (0.29)	129.28 (0.50)
XIII	Shamshabad	16,996	141.14	0.22	2.26	53.39
XIV	Budvel	19,316	112.82	21.48	—	77.76
XV	Himayatnagar	11,586	90.44	—	—	55.93
Total		47,898	345.40 (1.40)	21.70 (0.09)	2.26 (0.01)	187.08 (0.76)
XVIII	Ramachandra- puram	36,457	117.16	11.06	2,143.44	89.23
IV	Kukatpally	64,434	268.97	16.51	1,035.61	115.59
XVI	Populaguda	11,795	111.87	—	17.01	33.25
XVII	Kollur	14,218	96.85	—	—	54.29
Total		1,26,904	594.85 (1.36)	27.57 (0.06)	3,196.06 (7.29)	292.26 (0.67)

SOURCE: HUDA Office

PERCENTAGE OF WORKERS IN THE FIVE PROPOSED RURBAN REGIONS

Public utility	Public & semi public uses	Recreational area	Water bodies	Agricultural		
				wet cultivation		dry cultivation
—	6.25	—	315.50	1,438.55		+ 2,722.42
—	1,558.26	—	253.10	264.73		+ 1,347.11
—	547.95	—	454.46	2,442.76		+ 4,990.60
—	2,499.73	—	222.46	702.63		+ 1,912.56
—	4,612.19 (10.68)	—	1,245.52 (2.88)	4,848.67	15,821.36 (36.64)	+ 10,972.69
—	0.82	—	208.09	2,030.37		+ 4,674.45
—	406.92	—	88.92	400.15		+ 871.16
—	2.01	—	312.87	1,664.22		+ 3,188.86
59.78	57.65	—	119.79	933.55		+ 2,129.04
59.78 (0.16)	467.40 (1.22)	—	729.67 (1.91)	5,028.29	15,891.80 (41.50)	+ 10,863.51
4.30	361.03	—	437.26	1,561.07		+ 4,940.43
—	—	—	229.28	451.24		+ 3,337.13
—	0.81	—	137.73	419.83		+ 1,865.20
4.30 (0.02)	361.84 (1.41)	—	804.27 (3.13)	2,432.14	12,574.90 (48.95)	+ 10,142.76
—	1.50	—	135.94	501.54		+ 5,934.27
15.87	538.24	—	2,328.36	560.47		+ 1,459.33
—	1,101.66	—	221.69	385.74		+ 3,800.02
15.87 (0.06)	641.40 (2.60)	—	2,685.99 (10.87)	1,449.75	12,641.37 (51.18)	+ 11,293.62
1.05	1,184.25	—	500.37	1,545.20		+ 3,478.26
3.05	156.78	—	278.39	678.87		+ 2,885.57
0.34	6.67	—	2,132.09	851.67		+ 853.34
0.08	1.71	—	365.44	531.57		+ 5,704.69
4.52 (0.01)	1,349.41 (3.08)	—	3,276.29 (7.47)	3,607.31	16,529.17 (37.71)	+ 12,921.86

(Continued)

<i>Zone No.</i>	<i>Name of the zone</i>	<i>Gardens</i>	<i>Forests</i>	<i>Other uses</i>	<i>Vacant</i>	<i>Total</i>
II	Medchal	0.48	318.93	—	3,974.35	8,924.60
I	Dundigal	—	—	—	1,229.38	4,735.89
III	Shambhupur	4.35	146.93	—	9,923.02	18,729.25
V	Shamirpet	27.91	631.91	—	4,648.81	10,791.68
Total		32.74 (0.08)	1,097.77 (2.54)	—	19,775.56 (45.80)	43,181.42 (100.00)
IX	Ghatkeswar	—	170.91	—	4,216.71	11,611.50
VII	Maulali	—	—	—	3,949.34	6,419.71
VI	Keesara	—	—	—	7,235.83	12,544.25
VIII	Chengicherla	1.98	992.99	—	2,514.04	7,719.47
Total		1.98 (0.01)	1,163.90 (3.04)	—	17,915.92 (46.78)	38,294.93 (100.00)
X	Hayatnagar	10.09	1,732.05	—	4,523.02	14,219.48
XI	Nadergul	2.38	—	—	1,733.47	5,798.05
XII	Kothapet	15.80	—	—	3,151.18	5,671.12
Total		28.27 (0.11)	1,732.05 (6.74)	—	9,407.67 (36.62)	25,688.65 (100.00)
XIII	Shamshabad	29.42	160.57	—	2,773.37	9,733.62
XIV	Budvel	1.00	—	—	3,084.34	8,199.67
XV	Himayatnagar	10.09	—	—	2,102.37	6,767.94
Total		40.51 (0.16)	160.57 (0.65)	—	7,960.08 (32.23)	24,701.05 (100.00)
XVIII	Ramachandra- puram	9.27	—	—	6,077.03	15,156.32
IV	Kukatpally	11.42	—	146.43	6,086.55	11,683.97
XVI	Popalaguda	2.58	—	—	2,977.22	6,986.04
XVII	Kollur	12.27	—	—	3,244.74	10,011.68
Total		35.54 (0.08)	—	146.43 (0.33)	18,385.54 (41.94)	43,838.01 (100.00)

Industrywise number			Present workers			Total Workers
heavy	medium	small	heavy	medium	small	
—	—	2	—	—	4	4
—	—	—	—	—	—	—
—	—	1	—	—	2	2
—	—	—	—	—	—	—
—	—	3	—	—	6	6
—	—	—	—	—	—	—
3	14	17	2,889	2,120	1,776	6,775
—	—	—	—	—	—	—
1	9	10	1,727	8,661	423	10,811
—	—	—	—	—	—	—
4	23	27	4,616	10,771	2,199	17,586
—	—	6	—	—	194	194
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	6	—	—	194	194
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
2	13	40	8,461	1,275	785	10,521
4	5	49	9,531	2,093	992	12,616
—	—	—	—	—	—	—
—	—	—	—	—	—	—
6	18	89	17,992	3,368	1,777	23,137

TABLE 3 EXISTING EDUCATIONAL, HEALTH AND VETERINARY

Zone No.	Name of the zone	Popula- tion	Area in sq. mile	No. of villages	Educational facilities			
					primary	upper primary	high school	total
II	Medchal	16,000	59.17	13	1	2	1	4
I	Dundigal	5,501	18.56	6	—	1	1	2
III	Shambhupur	23,573	59.17	26	4	4	1	9
V	Shamirpet	16,027	29.08	13	—	4	—	4
Total		61,101	132.13	58	5	11	3	19
IX	Ghatkeswar	22,597	37.37	17	9	1	3	13
VII	Moulali	41,146	14.14	6	4	1	2	7
VI	Keesara	13,801	34.27	13	—	2	—	2
VIII	Chengicherla	22,927	26.29	20	9	1	4	12
Total		1,00,471	112.07	56	22	5	7	34
X	Hayatnagar	31,119	37.74	36	13	7	3	23
XI	Nadargul	9,615	16.72	5	3	1	—	4
XII	Kothapet	10,924	21.16	18	6	2	—	8
Total		51,028	75.62	59	22	10	3	35
XIII	Shamshabad	16,996	31.28	21	7	2	2	11
XIV	Budvel	19,316	31.18	19	8	2	1	11
XV	Himayatnagar	11,586	23.51	9	8	—	1	9
Total		47,898	85.97	49	23	4	4	30
XVIII	Ramachandra- puram	36,457	54.73	23	13	2	3	18
IV	Kukatpally	64,434	44.33	30	10	3	3	16
XVI	Popalguda	11,795	26.86	21	10	—	2	12
XVII	Kollur	14,218	37.02	11	7	3	—	10
Total		1,26,904	162.94	85	40	8	8	56

NOTES: M.V.D.=Minor Veterinary Dispensary

P.V.D.=Primary Veterinary Dispensary

SOURCES: Block Offices Data.

FACILITIES IN THE FIVE PROPOSED RURBAN REGIONS

<i>Medical and health facilities</i>			<i>Veterinary facilities</i>		
<i>Civil hospital</i>	<i>public health centre</i>	<i>child health centre</i>	<i>M.V.D.</i>	<i>P.V.D.</i>	<i>Veterinary sub-centre</i>
1	1	—	—	—	5
—	—	—	—	—	1
—	—	—	—	—	7
—	1	—	—	—	1
1	2	—	—	—	14
—	—	—	—	—	—
1	—	—	—	—	—
—	—	—	—	—	4
—	—	—	1	—	—
1	—	—	1	—	4
—	1	—	—	1	—
—	—	—	—	—	—
—	—	—	—	—	—
—	1	—	—	1	—
1	—	—	—	—	1
—	—	1	—	—	1
—	—	—	—	—	—
1	—	1	—	—	2
1	1	—	—	—	2
1	—	2	1	1	4
—	—	1	—	1	—
—	—	—	—	—	—
2	1	3	1	2	6

Block Development Officers, entourage).

The relationship between the Rurban Authorities and HUDA would be the same as it is now between the latter and the Municipal Corporation and the Panchayat Raj system in the development area. That is, the tiered system of relationships could continue with, of course, further refinements of division of functions and allocation of responsibilities. Scale of a function should continue to determine responsibilities. For instance, HUDA has responsibility for area wide communication linkages (loop, link, ring roads) whereas the development and maintenance of local roads is the responsibility of lower tier authorities. Responsibility for the development of other infrastructures such as housing, schools, public health and medical facilities and so on, could be divided among the various authorities. Most importantly, the comprehensive strategy plan for the entire development area is the responsibility of HUDA; the Municipal Corporation and the Rurban Authorities should be responsible for local development plans.

Similarly, just as in the case of the municipalities and the panchayats, the rurban authorities should be based on elective principles. Thus, it would seem that the creation of Rurban Authorities would require a new Act. We would argue that it would seem to be a trivial problem relative to the benefits that rurban administrative structure could bring to the metropolitan region. Unlike small and medium-size towns, the metropolis and especially a capital-city has problems which are most intractable and, therefore, surely it is right that we search for new ideas to solve them. One might point out that London's great success in creating a green belt around it is to a great extent due to the Green Belt Act. Almost 70 per cent of London's green belt consists of farms and this has been made possible because of special social contracts entered into by the metropolitan authority with the farming community. High cost of labour, tempting land values, and permanent insecurity stemming from Government's right to take over private land for public purposes, normally wipe out agriculture around metropolitan regions. It is worth quoting a passage here from David Thomas' *London's Green Belt*.

"The 1942 Scott Committee had reported in what must be one of the most influential footnotes in history of planning, what it envisaged a green belt should be. . . . It would not be merely an artificially preserved or sterilized ring of commons, woods and fields around a town to offset its smoke and dirt. That concept represented an exclusively townsman's point of view. Sterility must be avoided. Consequently a green belt was conceived as a tract of ordinary country of varying width round a town where the normal occupations of farming and forestry could be continued so that, as elsewhere in rural areas, the farmer was the normal custodian of the land. But the green belt had a second role. Because of its proximity to a large town it would nor-

mally include recreational land for the townsman's use. The farmer, on his part would recognize that certain types of farming such as sheep rearing were unsuited to such an area"¹¹

The proposed rurban authorities could enter into social contracts with the farming community to give Hyderabad a girdle green and at the same time create interesting urban nodes which would solve the population pressure of the capital city. The identitive affiliation and mental maps of the people of such regions could happily adjust to rurban pattern of settlement.

Administrative arrangements by their disciplining impact can substantially change the direction of social and economic processes. Requirements of town-planning, therefore, need to be carefully considered for affecting organizational innovations in the Metropolitan Region.

¹¹David Thomas, *London's Green Belt*, Faber and Faber, London, 1970, p. 84.

APPENDIX

ORGANIZATIONAL STRUCTURE OF HUDA

In order to carry out the day-to-day functions of the Authority in an effective manner, the HUDA's organization has been divided into four major wings with the Vice-Chairman as the Chief Executive of the Authority.

The four wings are :

1. Administrative and coordination wing;
2. Accounts wing;
3. Planning wing; and
4. Development wing.

The first wing stands to the work of Administration, public relations and land acquisition. The post of Secretary to hold the wing has not been filled and at present the Deputy Secretary is looking after this wing.

The Deputy Secretary is assisted by Administrative Officers, and other assistants. Public Relations Officer is assisted by one Exhibition Officer and one Librarian. one Revenue and Development Officer and Officer Incharge for urban research are allotted to this wing. The Accounts wing is headed by the Chief Accounts Officer, assisted by three Accounts Officers and three assistants. The financial transactions of the Hyderabad Urban Development Authority is looked after by this wing.

The third wing is a Planning wing. It is headed by a Chief Planning Officer, and consists of two branches, one for preparation of Zonal Development Plans in the municipal area, and the other for preparing the Master Plan and Zonal Development Plans in the Development area outside the municipal limits. The Municipal area is divided into 11 zones and peripheral area into 18 zones.

The fourth one is a Development wing headed by a Chief Engineer. He is assisted by the Executive Engineers, Assistant Engineers, Junior Engineers, Surveyors, Tracers and others. In addition to these technical person three administrative Officers and administrative staff are also attached to this wing.

The Development wing deals with the preparation and implementation of developmental schemes of HUDA. The Authority has taken up several land development schemes. The development area outside the municipal limits has been divided into three sectors, viz., (1) Ramachandrapuram (2) Moulali, and (3) Vanasthalipuram. Each of these sectors is under one project officer who supervises the implementation of the Zonal Development Plans and is incharge of the estate management.

Book Review

Economic Development, Cities and Planning: The Case of Bombay by NIGEL HARRIS, Oxford University Press, 1978, pp. 93 + Tables, Maps and Graphs, Rs. 45.

The book is an interesting account of the origin and growth of Bombay and its role in the national economy which has withstood the test of time over centuries. Propounding concentration thesis and hypothesising that sheer growth in numbers is not a problem but the scarcity of skills amidst the plenty of surplus labour power, the author pleads that 'in a country whose resources are exceptionally scarce and the creation of jobs a matter of short term survival, policies of indiscriminate decentralization could be disastrous' (p. 2). The author further argues that the city's 'prime advantage is precisely its concentration of activities and skills' (p. 2) which is breeding ground for technical advance and an insurance against future economic growth.

Within these value premises, the author brilliantly traces the historical origin and growth of modern Bombay in Chapters I and II and its problems in Chapter III. What has been the planning response to tackle its problems in author's view is like the proverb 'preparing the menu continually replace the act of eating the meal'. The failure of planning response is well illustrated by citing an example of how the BEST and Municipal Corporation resented the ambitious Backbay Reclamation scheme. Another illuminating example is given by a single statement that about 2000 unauthorized industrial units in 1964 increased to 5000 by the time of the publication of the Plan of Bombay. These are some of the arguments in favour of concentration thesis and pointers in the direction of planning failures. The author gives beautiful reasoning for this that 'the main problems of planning Bombay lie not with the planners, still less with the quality of plans, but with the political and administrative agencies that sets the planners to work with certain terms of reference, receive finished plan and supposedly are responsible for its execution' (p. 45).

In Chapter V: 'Decentralization and the City' the author narrates some of the background thoughts of Indian planning since the Agrarian programme of Congress in 1936, Lucknow session to the recent Five Year Plans and also the constraints of regional planning like interstate rivalry, problem of demand of central funds, claims of backward areas to the ambition of

each state to be economically independent and how these lead to the diversion of public funds to poor-non-reproductive activities. Despite the handsome incentives given by the state government, the policy of decentralization is not successful in Maharashtra, and have failed to attract entrepreneurs. The planners did not see the city as an instrument of economic growth and vortex of all change but a physical entity. The planning of a new-Bombay in terms of cost-benefit analysis is rejected by the author on the plea that 'technical specifications and prices are no longer clear and the results become unpredictable' (p.63). By citing a British example of new-town development in the vicinity of London, which miserably failed, the author argues that 'dispersal around a city is no more than a re-distribution within a region, a spatial expansion of an existing city. It does not directly bear on the problem of backward region at all. Planned dispersal can obviously assist the redevelopment of existing city areas, but can not be an alternative to it. If dispersal does not go hand in hand with separate and sustained efforts at urban renewal, the problems will only get worse' (p. 72). In Bombay the drive and zeal to dispersal is still relatively weak.

In the background of the above analysis, the author pleads for the concentration thesis but he does not explain as to why industrial productivity increases with the increase in the size of the city. This necessitates an empirical verification of the facts of the two growing situations: (i) one of concentrated metropolitan economy and the other of (ii) decentralized regional economy like Vidarbha region and a sensible aggregation of sub-optimal output of different spatial locations of the latter one, might indicate altogether different results than the output of the concentrated spatial unit of Bombay's Metropolitan Economy. Till two different situations are assessed over a period of time, a study in comparative dynamics, it is difficult to give value judgements in favour of the either. An exercise done so without caring for the above simply indicates the author's legacy for a school of thought and thus an element of bias or scepticism of those who believe that societies may gain through the gigantism of urban economy. There are fluctuations in income and output over a period of time and hence the growth is curvilinear not linear and hence the shape of the output curve assumes first an increasing trend for sometime followed by constancy, and a relative decline afterwards although, on an average, the metropolitan economy might be showing increasing trends both in income and output.

We fully subscribe to the views of the author, as contained in Chapter VII, 'Towards a Plan' that 'without the integration of the cities' development perspectives in India's National Development Plan, the plans of each city can at best be no more than instruments in the competition between cities (p. 76) and thus they remain as prescriptive documents of land-use and housing plans. The author suggests that 'the plan for Greater Bombay and for the Metropolitan region should be subplans of the

National Five Year Plan, which should lay out the strategy for maximizing the contribution of the area concerned to national economic growth. The core of the plan should be the control of investment, in the light of the special tasks laid upon the city by the national plan, and thereby of employment and its distribution within the municipal or metropolitan area' (p. 84). This is a laudable proposition which demands a change in decision-making so that the element of space is well taken care of in the planning process and the National Five year plans. We can sincerely hope that this volume will have its tremendous impact on the planning process and in designing the developmental strategies.

—R.K. WISHWAKARMA

—A.K. AGARWAL

Book Notes

Slum Clearance and Improvement, Centre for Urban Studies, Indian Institute of Public Administration, New Delhi, 1979, pp. xii+151, Rs. 30.

The volume contains papers contributed at the seminar organized by the Centre for Training and Research in Municipal Administration (now Centre for Urban Studies) of the IIPA. The papers deal with the nature and causes of slums, its morphology, and review of programmes and policies so far initiated in various cities and towns in India. The papers also provide guidelines for the prevention as well as improvement and clearance of slum areas.

Dev Raj in his paper treats the slums as a manifestation of certain socio-economic conditions prevailing in this country. Tracing the history of slum clearance and improvement schemes, he analyzes the drawbacks in them. In order to have an effective utilization and up keep of services as also for prevention of slums, he stresses the need for involving the people in such programmes. For this he pleads for an integrated community approach having social and physical elements in it.

T.K. Majumdar regards the phenomenon of slums as a stage in the process of urbanization in developing countries. Based on a comprehensive study of squatters in Delhi, he discusses the physical and social characteristics of squatter settlements and advocates socio-economic integration of squatters into the wider urban system. H.U. Bijlani stresses slum improvement because we have to live with it in years to come. He pleads to initiate a programme of 'slum participation' to impart the slum dwellers education for living and working.

Raising larger policy issues, Mohit Bhattacharya suggests to take care of the 'flow' of immigrants through advance planning. As regards the 'stock' of slums, his suggestion is to relate the subsidy presently being given for slum housing programmes to the income composition and to follow a policy of loan-cum-subsidy for reducing the burden on public exchequer. He also feels that the band of agencies involved in slum improvement have to be harmonized either by amalgamating the existing institutions or through a new project approach.

K.S.R.N. Sarma analyzes the scope, scale and conditions of the central scheme for Environmental Improvement (EI). He studies its implementation in various cities and towns and points out gaps in its implementation.

The implementation of EI is studied also by M.B. Achwal. In view of financial difficulties faced by the civic bodies in maintaining the infrastructure, he suggests a maintenance subsidy for first three years. He also suggests ways for an effective utilization of grants.

H.C. Arora studies the legal aspect and observes that the multiplicity of legislation has stood in the way of elimination of slums as the different legislation lay different standards for similar objects. He wants the scheme of slum eradication to be self-financing by making it a comprehensive commercialcum-residential scheme.

Paper prepared by the Centre for Training and Research in Municipal Administration surveys the various schemes of slum clearance and improvement introduced in the cities of Madras, Delhi, Lucknow, and Bombay and analyzes difficulties encountered in its implementation. Various steps taken by the Greater Bombay Municipal Corporation for slum improvement and the difficulties faced in its implementation are analyzed by Pratibha Joshi. She also gives an account of the administrative set-up needed for dealing with this problem. Sudhendu Mukherjee in his paper on Calcutta observes that economically weaker sections have not benefited from the new townships being developed within the CMA. He suggests to strike a balance between the new township projects and slum improvement programme.

G.D. Bahri presents an account of the slum clearance and improvement efforts undertaken in Delhi. B.K. Shivalingappa studies the problem of slum in Bangalore. He prefers to provide minimum standard of environmental hygiene and essential services and not the construction of elaborate structures because the number of slum population is going to increase manifold towards the end of the present century requiring a huge investment.

—GANGADHAR JHA

Civic Consciousness, Centre for Urban Studies, Indian Institute of Public Administration, New Delhi, 1979, pp. 69, Rs. 20.

The volume is an outcome of a seminar organized jointly by the Centre for Training and Research in Municipal Administration (now Centre for Urban Studies) of the IIPA in collaboration with the Municipal Corporation of Delhi. The papers included in this book deal with various aspects of civic consciousness and the ways to promote it.

Diagnosing the lack of civic consciousness in India, Mohit Bhattacharya observes that citizens' interest in local affairs is hampered due to poverty and inadequate essential services. In view of a different nature of the problem obtaining in metropolitan cities, he suggests a two-tier municipal government based on the federal principle of distribution of power. R.M. Varma argues that civic consciousness is a two-way traffic. The civic

authority is expected to provide an efficient service system and the citizens are required to be responsible. This has, however, assumed the shape of a vicious circle which can be broken by making the citizens feel a sense of belongingness, by educating them and redressing their grievances. Redressal of citizens' grievances in Delhi is studied by L.P. Gupta. He lists the type of grievances and the steps to redress them.

With a view to promote civic consciousness, S.N. Rao suggests to treat the students as the target group. Likewise, S.A. Ali also likes to assign an important role to educational institutions in arousing civic consciousness among the pupils. He suggests that students and teachers along with the local leaders should occasionally participate in cleanliness drive and adult education.

G.N. Singh studies the scope of people's participation in the public health programme of the Municipal Corporation of Delhi. He observes that much of the problem in this field has cropped up because of carelessness on part of the citizens. He feels that civic authorities, parents, teachers and social workers have to play a crucial role in propagating civic sense.

According to Basudev Sharma, civic consciousness in the short run depends on an adequate role performance of an efficient public relations. He suggests that the public relations system has to recognize the existence of many publics and to adopt different media to reach the different type of public. A syndicate report prepared by the municipal officers studies the existing system of redressal of citizens' grievances. It suggests several useful measures to set up an adequate machinery for the redressal of citizens' grievances.

—GANGADHAR JHA

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*Urban Development and Social Equality**

ABHIJIT DATTA
AND
MOHIT BHATTACHARYA

URBAN DEVELOPMENT has generally been conceived in terms of creation of infrastructural facilities such as roads, water supply, drainage and sewerage and so on. The question of social equality crops up when one inquires into the beneficiaries of urban development. Urban planning and development produce, in its process, output of various kinds. Some of these are areal in character and some others are directed toward definite target groups. For instance, planning itself is comprehensive by nature, as it is supposed to reorder the urban area irrespective of the different kinds of localities within it. At the other end, services that are saleable commodities can be directed toward specific target groups through the price mechanism. In this category fall such utilities as transportation, water supply and electricity. An urban development policy consciously tilted toward social equality would have to spell out the need for and the mechanics of a system of delivery of a basket of urban facilities for the benefit of the economically weaker sections who would otherwise have difficulty in getting access to these facilities. Such a policy presupposes an equal distribution of the facilities and services and tends to correct the imbalances created in this process.

GOALS OF URBAN PLANNING

Traditionally, city planning has been looked at as essentially land-use planning. This is the engineer-architect's point of view which wants to see a city develop in a particular physical shape with specific allocations of space for particular uses and commensurate infrastructural developments in the form of roads, schools, hospitals and other community facilities. It finds concrete expression in the all-too-familiar, neat, multi-coloured city

*Submitted at the seminar on "Social Aspect of Urban and Regional Planning, organized jointly by IIPA and the Delhi Sociological Association, November 18-19, 1977.

master plan. The second type of urban planning is an altogether different concept for which one needs a different 'breed of planners'. Insofar as it seeks to accept some of the concerns of national planning for economic and social development, it is closer to the dominant ideas governing planning at the national level. The only difference is that the exercise has for its focus a distinct spatial unit. Another important concern of this type of urban planning is to formulate policies and programmes for provision of essential urban infrastructure and to ensure minimum essential standards of the social overheads. Both the concerns are highly interrelated as the goal essentially is to promote economic and social development.

If the town planners' main aim is to achieve the 'city beautiful', the economic and social planners' chief target is 'city productive'. What we have been practising so far in this country is the first kind of planning in our urban areas with its primary emphasis on regulation of use of land and engineering and architectural aspects of planning. Since the days of the British Raj, city development in India has been the overt expression of certain values about living cherished by the colonialists and the upper middle class. Hence, there were attempts at creating pockets of cleanliness and orderly habitation in the otherwise chaotic and congested cities. This value orientation persists to this day, the only difference being the scope of planning which has changed from the insular 'civil lines' idea to a more broad-based city master plan. Possibly, the continuing 'tradition' of town planning, the socio-economic background of practising town planners and architects and social pressures put on them by economically and culturally dominant groups have all contributed to the kind of town and country planning that we have in contemporary India.

Another important cause for the persistence of two kinds of planning at macro and micro levels is the absence of spatial orientation of our national and state planning. National planning has generally been concerned with the choice of sectors to be developed and with separate larger projects. Aside from occasional expressions of anxiety about 'regional imbalances' and location of industries (as in the Third Plan), planning at the national level has not been consciously related to the natural endowments and the needs of specific space units at sub-national and sub-state levels. The way urban planning has so far been conducted provides a glaring testimony to the disharmony that exists between planning at the national and state levels and planning at the urban area level. Whatever is postulated at the Central level in terms of achievement of growth targets does not seem to have any significance for the different space units down below. If the Fifth Five Year Plan has for its major objectives removal of poverty, achievement of certain growth targets and distributive justice in the shape of the minimum needs programme, the different space units such as states, districts, blocks and municipalities, are expected to move in concert to fulfil the promises made in the plan. This 'top-down' linkage needs, of

course, to be supplemented by 'bottom-up' contacts and feedbacks. Depending on the natural endowments and needs of specific space units, each unit will be formulating a plan framework to suit its own conditions and requirements. In Polish City planning, this kind of integration between national and urban planning is achieved through what is known as the 'stage plan'. "The stage plan method links the process of city planning with the rhythm of economic planning. The realization of the long-term master plan, or, as it is called in Poland, the perspective plan, of a city is expected to take place by stages, each stage determined by the national economic five-year plans".

So, our policy toward urban development seems to have been characterized by a schizophrenic quality. At the level of verbal philosophy, there is apparent concern for the urban poor and equalization of services and facilities. At the practical level, the planning technology and investment decisions seem, however, to move in different direction marginally attending to the problems of urban poverty.

URBAN LIVING CONDITIONS

The city in India has different kinds of customers, so there is differential treatment to its residents. The supply of services vary widely from locality to locality. The tendency is to supply more and better services to those areas which are inhabited by the affluent class who can manage to tilt the scale of city administration in their favour. Civic services reach the economically depressed sections and localities of the city irregularly and in dribblets. Commenting on this sort of discriminatory treatment in Delhi India's capital city—Asok Mitra, the eminent social scientist write:

Anyone who moves about in Shahdara, City—Sadar Paharganj, the old city, and more particularly the area west of Patel Nagar, Tilak Nagar, Rajouri Garden, Anand Parbat, for example, will be appalled at the danger in which the capital stands of either continuing to be unsatisfactory or rapidly turning into a solid slum. None of these localities is free from water shortage, from filth and garbage, from noise and bustle, from vehicular congestion on the carriage way, and pedestrian congestion on the footwalks. From these areas, New Delhi merged with its beautiful, well-tended colonies, receives no loyalty or pride rather much smouldering envy.

Urban poverty is a cruel reality in India as in any developing country and it impinges vitally on the design of urban areas, their living patterns and the supply of civic services. It has been estimated that about 52 per cent of the urban population live near or below the poverty line. An authoritative study by Dankekar and Rath on poverty in India makes the

following observation:

During the past decade (1960-61 to 1967-68), the per capita private consumer expenditure increased by less than half a per cent per annum. Moreover, the small gains have not been equitably distributed among all sections of the population. The condition of the bottom 20 per cent rural poor has remained more or less stagnant. The condition of the bottom 20 per cent urban poor has definitely deteriorated; and for another 20 per cent of the urban population, it has remained more or less stagnant. Thus, while the character of rural poverty has remained the same as before, the character of urban poverty has deepened further. This is the consequence of the continuous migration of the rural poor into the urban areas in search of a livelihood, their failure to find adequate means to support themselves there and the resulting growth of roadside and slum life in the cities.

The picture of urban poverty will be clear from the fact that in the Greater Bombay metropolis, according to the 1961 census count, the number of houseless persons was placed at more than 62,000. The comparable figure for Calcutta metropolis was about 30,000. Reporting on the Calcutta urban scene, the Calcutta Plan writes almost in despair:

The distribution of housing space is similar to that of income: a relatively small minority at the top have a disproportionately larger share. This means that the majority are living at standards far below 40 square feet per person. It must be remembered also that this latter group is not composed solely of singlemen. Countless families also are forced to live in unbelievable congestion in one room, under intolerable conditions of sanitation and water supply. Under such circumstances healthy family living, even in its most humble form, is impossible.

The situation is not dissimilar in other metropolitan cities like Delhi or Bombay. There is a huge backlog of urban services in almost all the cities and the condition is further worsened by continuous flow of in-migrants from the villages and the small towns. At the instance of the Planning Commission, several studies have been undertaken on the urban living conditions in the major cities of India. The data collected by researchers present a woeful picture of urban India, where the living environment seems to be deteriorating fast in the face of chronic shortages of all the essential civic amenities like water supply, housing, roads and transportation, education, public health and medical facilities and so on. It is this deteriorating urban environment and deepening urban poverty which set the background for discussions on public policies. In the next section, we propose to examine the major policy pronouncements in relation to urbanization, and urban planning and development. The policies can be

regarded as timely responses to the gathering urban crisis which we have just sketched in discussing the urban condition.

PUBLIC POLICY ISSUES

During the British regime, urban development meant the development of the civil lines where the elite used to live. The other aspect of urban development was concerned with improving the sanitary conditions so that the elite could have a healthy living environment away from the busties and filth and dirt. After Independence, urban development policy did not change radically in spirit, although more funds have been pumped in to augment services and facilities. The urbanization trend and the predicament of the urban areas, especially the bigger ones, caught the attention of national planners at the time of formulation of the Third Five Year Plan (1960-61 to 1965-66). The Third Plan looked at urbanization as an important aspect of the process of economic and social development. There are many problems associated with urbanization, such as rural-urban migration, levles of living in urban and rural areas, relative costs of providing economic and social services in towns of varying sizes, housing for different consumer groups, provision of facilities like water supply, sanitation, transport and power, pattern of economic development, location and dispersal of industries, civic administration, fiscal policies and land use planning. In laying down the development policy, the Third Plan had in view the broad objective of securing a balanced development between large, medium and small industries and between rural and urban areas. Accordingly, it was suggested that: (a) as far as possible, new industries should be established away from large and congested cities; (b) the concept of region should be adopted in the planning of large industries; (c) the rural and urban components of development should be blended properly in community development projects or other areas within the district; and (d) diversification of occupational pattern should be attempted in each rural area in order to reduce the dependence on agriculture.

The high costs of urban development were generally attributed to rising costs of providing housing, water supply, drainage, transport and other services. Unemployment, overcrowding, growth of slums and rise in the number of persons without shelter—all these tend to worsen the urban situation further. To quote the Third Plan: "The problems to be faced are formidable in size and complexity, and solutions for them can be found only if their nature is fully appreciated not only by the State Governments, but also by municipal administrations and by the public generally and if an increasing amount of community effort and citizenship participation can be called forth within each urban area". Certain minimum directions in which action should be taken to come to grips with the urban

situation were listed as under:

1. Control of urban land values through public acquisition of land and appropriate fiscal policies;
2. physical planning of the use of land and the preparation of master plans;
3. defining tolerable minimum standards for housing and other services to be provided for towns according to their requirements and also prescribing maximum standards to the extent necessary; and
4. strengthening of municipal administration for undertaking new development responsibilities.

The plan document listed out the following major steps to be taken for controlling land values as a matter of high priority:

1. Issue of notifications for freezing land values with a view to early acquisition of land by public authorities;
2. Acquisition and development of land by public authorities in accordance with the interim general plans for preventing speculation. The land should be acquired in bulk, although, depending upon local circumstances, the programme of acquisition would have to be suitably phased. Acquisition proceedings should be speedy and legal procedures should be simplified as far as possible. It is important that development of the acquired lands should be expedited. The essential services have to be provided by public authorities. Besides development undertaken directly by them, under appropriate regulations, cooperative and private agencies should also be utilized;
3. Allotment of land on a leasehold basis. As a rule, lands acquired by public authorities should be given out only on a leasehold basis so that, besides the recurring income secured on account of the ground rent, a fair share in the increase in the value of land continues to accrue to the community;
4. Betterment levies and taxation of agricultural lands put to non-agricultural uses. These are growing sources of revenue for States and local bodies, but in several States the existing provisions are inadequate;
5. Capital tax on transfer of free-hold lands;
6. Taxation of vacant plots in developed areas with power to acquire if they are not built upon within specified periods;
7. Setting a ceiling on the size of individual plots and limiting the number of plots which a single party may be permitted to acquire; and
8. Determination of appropriate norms of rent and regulation and control over rents.

Regarding laying down of standards for housing and other services, the Plan insisted that certain minimum standards should be set for them in order that solutions could be found out to the problems of mass housing and elimination of slums. It was also urged that luxury housing and waste of urban land should be prevented for which a number of fiscal, legal and engineering methods were suggested.

The last item in the policy package, namely, strengthening of municipal administration, was emphasized in the following manner: "At the local level, municipal administrations alone can undertake satisfactorily the task of providing the services needed for development in urban areas, expansion of housing and improvement of living conditions.

The Fourth Plan suggested a much more cautious policy, taking due cognizance of the constraint of resources of all kinds. The Draft Fifth Plan while taking stock of the situation, observed that despite growing awareness in the States of the problems of urban development, they have not been able to make much headway in taking comprehensive action for the adoption and implementation of master plans due primarily to financial and organizational bottlenecks at the local level. The main emphasis has been on the extension or augmentation of civic services and urban amenities without showing much concern for a comprehensive approach to urban development.

The Draft Fifth Plan underlined the need for a multi-faceted strategy to tackle the complex problems of urbanization. To cite a few instances, for a more desirable and balanced spatial distribution of economic activity, appropriate measures have to be adopted to attract industries to new urban centres. At the other end, certain disincentives have to be created to prevent the city ward movement of population. At local level, innovations in administrative organizations have to be considered to lend support to a range of urban activities. The compulsions of regional and area planning might instigate the creation of new areawide institutions or some other instrumentalities transcending the boundaries and interests of a congeries of local authorities. Municipal institutions need to be strengthened by adopting a system of devolution of funds from the States. Last but not the least, a very important instrument to carry out planned urban development is a properly conceived and designed urban land policy. Like its predecessors, the Draft Fifth Plan has dwelt at length on the objectives and tools and instruments of a much needed public policy on urban land.

IMPLEMENTATION BALANCE SHEET

It cannot be said that all that has been announced as policy directives in the successive five year plans has been actually implemented. For instance, despite repeated policy pronouncements recommending location of big industries away from the larger metropolitan centres major new

industries continue to be set up in or around the metropolitan cities. Also, the policy on urban land has remained largely a paper policy. At no time it has been seriously pursued; nor have its full implications been adequately worked out. Yet one has to concede the point that since the Third Five Year Plan, the problems of urbanization and urban planning and development have been engaging the attention of planners and policy makers at national and State levels. On the credit side, there are a few notable achievements to report. To promote orderly growth of urban areas and to check unregulated urbanization, master plans have been prepared for all major towns and cities. Currently, regional planning exercises are being carried out especially in large metropolitan areas. Today, town planning is received with considerable respect and the general trend is to introduce the planning techniques in order to mitigate the evils of unchecked urban growth. Secondly, attempts are under way to improve the infrastructural facilities in the urban areas. Basic urban utilities such as water supply and sewerage, transportation, etc., are now being augmented in many cities in a planned way. Thirdly, there is growing consciousness today about creating a healthy urban environment. Population problems—air pollution and water pollution particularly are receiving attention at appropriate levels, and legislative and administrative measures are being taken to fight out environmental pollution. Fourthly, the problem of urban slums that has so far been marginally attacked is currently being tackled with much more tact and tenacity. The initial idea of slum clearance has virtually been replaced by the concept of slum improvement, and allround efforts are underway to give the slum dwellers a better deal by providing, at least, the essential services such as street lighting, drainage, water and public health facilities. Fifthly, on the housing front, housing boards have been set up in almost all the States to increase the supply of housing in the urban areas. At the national level, the Housing and Urban Development Corporation has recently been set up to provide capital funds for housing and allied urban development operations. The Corporation has also undertaken limited building construction operations in selected cities. Sixthly, the administrative organization for urban development is being toned up in two ways. On the one hand, the traditional elective municipal governments are being revamped by funnelling more funds, improving their personnel structure and training the municipal employees. On the other hand, new type of non-elective organization, known as the urban development authority, is being set up in the major urban areas to devote exclusive attention to urban development tasks, such as building of new roads, construction of trunk sewers, water reservoirs, houses, etc., acquisition, development and disposal of urban lands, planning and construction of new colonies and similar other capital development functions.

These, no doubt, are piecemeal methods to come to grips with a gigantic problem. The connecting theme in all these efforts is planned

intervention in the process of urbanization. As earlier pointed out, the policy planners at the national level are engaged in sophisticated theorising to guide action programmes. But, there are genuine difficulties in the way of applying many novel ideas in the actual field situation. For instance, the country being federal, the Central Government can at best give policy leadership; but actual implementation would depend on the constituent State Governments. Nor has the Central Government much leverage presently, as the plan funds directly expendable by the Centre on urban development are too meagre to good the States to fall in line with the Central policy guidelines. Also, there are competing demands for plan funds. The investments in urban development have low priority as these are generally looked at as consumption oriented. Rural lobby is much more powerful and is naturally able to get more funds from the plan budget.

The real difficulty lies at the level of the States. In most instances, the States are in the acute financial stress, and are unable to divert funds for urban development. The problems of urban development have ultimately to be shouldered by them; yet there is general reluctance to face these problems. The State plans usually pay lip service to urban development since agriculture and other items have much more pressing claim. In general the cities and towns are exhorted to pursue urban development tasks by raising more resources from their own domestic sources of revenue, without depending much on State financial assistance. As an instrument of intervention, urban planning has also been far from effective. It is predominantly land-use and physical change oriented. Socio-economic planning is yet to be blended with the kind of physical planning that is in vogue in the major cities and towns. At the ground level, the municipal bodies fall between two stools. The citizens are reluctant to pay more taxes, as the city government is unable to augment the civic services and even to maintain them with a modicum of efficiency. At the other end, the States want them to provide more and better services and, in general, to improve their performance without assuring any additional financial resources. The municipal bodies have antiquated organizations dating back to the last century and modernization of their administrative structure and operations is long overdue. In most municipal organizations, the political processes have failed to match the needs of growing urban problems. Nor has the quality and quantity of managerial personnel corresponded to the even increasing administrative responsibilities. The big city government has thus been unable to respond to the urban challenge adequately. Organizational and administrative disabilities have stood in the way of mobilizing more domestic resources and putting up a vigorous bargaining posture before the higher level governments.

Their incompetence has led to their virtual supersession by special purpose bodies—single purpose and/or multipurpose. To take urban

development out of elective bodies' means, in effect means divorcing it from the interplay of local influences. This is expected to destroy the decision-processes and reinforce the elitist concept of urban development supported by bureaucrat upper middle class brokers. Another phenomenon worth our observation is the emergence of some kind of special organization for attending to the poor much like the SFDA in the rural areas. Slum Clearance Boards fall in this category. Social equality in the urban context needs not only ideological commitment but also actual operational support. It seems the two realms are at present falling apart.



*Rurbanization : The Indian Context**

R.N. MUKHERJEE

URBANIZATION IS commonly understood to mean extension of urban limits to hitherto rural areas and increase in the proportion of urban population to rural population. In western and developed countries urbanization took place rapidly immediately after the Industrial Revolution and long after agricultural revolution. Urbanization in those countries was a natural consequence of the growth of the economy which could pay for it. The Industrial Revolution generated employment opportunities attracting rural population for whom urbanization provided the solution for settlement, thus urbanization in those countries, followed industrialization.

In developing countries particularly in India, of late, there has been a lot of talk from some quarters urging for rapid urbanization and a national urbanization policy mainly from the elite and from western-school-trained-urban planners. Before anything of the sort is done, it is necessary to understand few basic points in relation to the economic situation existing in India today and that which existed in those countries where urbanization took place. Further, those countries where such urbanization took place long ago are now talking of the necessity of reversing the process of urbanization after experiencing all its ill effects, since urbanization creates more problems while solving a few.

SOCIO-ECONOMIC BACKGROUND EXISTING IN INDIA IN COMPARISON TO FEW VASTLY URBANIZED COUNTRIES

India with a population of 586 million as per 1971 Census has an average per Capita income of Rs. 340 per annum and a big percentage of the population does not even have half the above average income. Even considering the present urban situation, 51.34 per cent of the urban population have a monthly income of Rs. 30 (1964-65 figures) per family of five.

*Paper submitted at the Indian Chamber of Commerce Conference on "Calcutta 2000: Some Imperatives for Action Now", April, 1976. Published with the permission of the organizers of the conference.

Table I below shows the per capita Annual incomes of few countries where rapid urbanization took place:

TABLE I

<i>Name of Country</i>	<i>Per Capita Annual Income (1968)</i>
U.K.	1457
U.S.A.	3814
West Germany	1726
France	1940
Australia	1991
Canada	2247
Italy	1160
Switzerland	2301
Netherland	1619

It may be seen from the above Table that the highly urbanized countries have a very high per capita income but a very low population figure compared to India. Only comparing the increase in population figures with that in other urbanizing countries without in any way comparing the income figures which is the vital consideration for any sort of urbanization, will be fallacious leading to a wrong decision.

Coupled with the economic consideration come the sociological and climatological factors which need thorough consideration. India has a tropical climate which demands living in the 'open' rather than in the 'closed type of apartments' which is an essential requirement of the cold countries. Further, the social structure of India, though undergoing a transformation in the higher elitist groups by copying the Western world is still based for the 90 per cent of the families on the concept of joint family system in contrast to 'Individualistic family' pattern prevailing in developed countries. Urbanization tend to break the joint family system which is a part and parcel of India's social life and a heritage of India's culture. The disintegration of the joint family system is attributable to infiltration of Western ideas and urbanization. It is a question for serious consideration and decision whether India should accentuate this trend by adopting a policy of vigorous urbanization or should find out a solution of its own suitable for the socio-economic structure prevailing in India. The pattern of human-settlement, when planned, should conform to the culture and heritage of a country rather than on a borrowed system of socio-economic situation not prevailing in that country. If a decision is taken in favour of rapid urbanization, the country is committed to a costly way of living, by drastically changing its life-style without knowing where the high cost of this artificial way of living will come from or in other words, a commitment and decision is made on future human settlements

in India, uprooting them knowing fully well that they cannot sustain and pay for the high cost of urban life, not to speak of their daily livelihood. On the contrary, the rural India which really represents true India still preserves and will continue to preserve the existing socio-economic structure in rural setting for time to come and the thinkers of Indian philosophy and culture have reiterated time and again that the fate of the country is linked with the rural India which is wedded to these cultures and pattern of society. Mahatma Gandhi, the father of the nation, told unequivocally that the growth of India lies with villages. If it is attempted to force a life-style based on western world, the people may not accept it. It is really the teeming millions of the rural population who need to accept the system by forsaking their age-old tradition. It may be accepted by a handful of elitists who have got used to that system. They may desire that the same should be accepted by the whole of India also; but it should not be imposed upon those who are reluctant for the same. It is also a matter of great concern as to whether this new way of life imposed on a country having its own culture and tradition prevalent for thousands of years will really prove to be good. Urbanization is artificiality. It cannot definitely be said that the human settlement in an artificial surrounding is ideal in preference to a rural set-up. Even very highly urbanized countries are now thinking for going back to natural life in rural areas. The aim, therefore, should be to plan future settlement in the rural areas, rather in urban areas, to pressure the ecological balance.

Factors Affecting Human Settlement

The prime factors affecting human settlement, from time immemorial have been availability of food or source of income and availability of drinking water. Civilization have grown in the banks of the Rivers Nile, the Indus, The Tigris and the Euphrates, where the fertile soils produced enough food and drinking water was available from the rivers. Any attempt to locate human settlements without considering their basic necessity or economic problem, cannot ever meet with success, to the contrary, all such efforts are bound to fail.

With growth of civilization, another factor which has been added to the problems of human settlement is the socio-cultural affinity. In recent past efforts were made to transplant uprooted humanity in areas where there was good prospect of economic well-being, but it met with failure as the socio-cultural setting was quite different. The community, therefore, could not find a firm footing.

In the present circumstances, therefore, it is absolutely necessary to provide the economic solution first followed by other necessities of civilized living, if a human settlement has at all to take deep root.

If now we have to turn our attention to the growth of population in India which has been estimated to be 945 million by 2001 A.D. meaning

thereby an additional population of 359 million, we have at the first instance to consider how to provide food for them.

Any discussion as to whether they would be located in cities or in villages is but ridiculous if it is unknown wherefrom they would draw their earnings or whether there would be enough food for them to eat.

Here comes the question of economic planning for the entire nation for a long-term period. As has been unquestionably decided, agricultural revolution has to be pursued in India at all costs, if India has to survive. While this must be achieved, it is desirable that planning for agricultural revolution should be based entirely on utilization of human resources to its utmost capacity. But as is seen from preparations and programmes, it is not absolutely clear that this idea is being pursued. A mistake would be committed if mechanization of agriculture is undertaken rather than revolution in agriculture by providing necessary in-puts for higher productivity. Mechanization in agriculture without first consolidating land-holdings will not be feasible. Moreover, mechanization is likely to throw a good number of the agricultural labourers out of employment. While modernization/mechanization may effect additional yields, the benefits accruing after considering the investments in mechanization appear to be only marginal if the manpower thrown out of employment from agricultural sector is also taken into consideration. Mechanization in agriculture may be perfectly justified in other countries where national resources are more available compared to labour force and where limit of industrialization is not constrained by availability of resources. But in developing countries like India, where manpower is abundant and resources are scarce, any shift of labour force from agriculture is going to be catastrophic, since, additional employment cannot be simultaneously or immediately created through industrialization due to lack of resources.

The end result if mechanization in agriculture is not stopped may be that at the turn of the century India will have 359 million additional population needing new settlement and a surplus population from agriculture. If a meagre 25 per cent is considered likely to be thrown out of agricultural sector—an additional 115 million will require economic rehabilitation, making a total of 474 million people or 95 million families.

Let us now try to make an exercise if they can be accommodated by urbanization through industrialization. If an investment of Rs. 75,000 is assumed for creating employment for one person by putting up concentrated heavy or medium industries, a fabulous amount of Rs. 712,500 crores is needed only for setting up the industries. Then for urbanization another Rs. 2,37,000 crores is needed assuming a meagre Rs. 5,000 per head for urbanization. Those who are supporters of urbanization may consider if it is possible to make available 9,49,500 crores of rupees within a period of 25 years, *i.e.*, Rs. 38,000 crores per year when the annual plan budgets do not exceed Rs. 10,000 crores. Coupled with this problem will be the

problem for maintenance of urban area and facilities created which itself require at least Rs. 500 per capita per annum against an income of Rs. 340 per capita per annum.

The whole problem has, therefore, to be reviewed from an entirely different perspective.

We may try to reduce the magnitude of the problem first by ensuring that revolution in agriculture will not be done through mechanization in order that there is no surplus labour from agriculture. Even if there be some as it happened in developed countries, then the whole of the surplus labour from agriculture, if any, and the additional population due to natural growth will all be settled in appropriate rural areas with adequate amenities. These areas, will not be converted into urban areas but will be given few basic facilities like semi-pucca but less wider roads, drinking water supply, few commercial and economic inputs like Banks, etc., all in a rural setting without needing new housing, sewerage or drainages. The areas will essentially be rural areas with selected urban facilities and may be called for the purpose of distinguishing them as 'Ruraban' areas. Now the task gets boiled down and reduced to 'Rurbanization' of some rural areas as against urbanization of the same area. The estimated cost differential only for this shift of scale is of the order of Rs. 1,66,000 crores. The basic problem to find employment for them still remains. While the answer or solution for the same is not exactly the subject matter of this paper, yet it is essential to find an answer as the two issues are interdependent and the settlement issue cannot be solved without solving the employment issue. Here would come the question of having a 'National Industrial and Economic Development Framework' which should identify the available unharnessed resources in various regions and embark on projects for harnessing them within the existing limitation of available capital. The geographical location of these resource-regions will be the locations for future human settlements which should be 'rurbanized' along with the Industries or development projects. For employing all the population as stated above, economic planning exercise has to be made to put the available resources to its optimum utilization in order that employment oriented projects are taken in hand. For distributing the economic benefits all over the country, particularly in the rural areas, various small and medium scale industries to support agricultural revolution and other consumer industries have to be set up at local levels to feed few market centres, in order that the products can be consumed near to the factory without needing long and criss-cross movement of raw material and finished goods. Large scale industries are, however, not ruled out, since these would be necessary in specific location where abundant natural resources like coal, minerals, water, etc., are available, but they must not convert the surrounding areas into urban areas by instilling an artificial life, but should allow continuance of the existing life style. This will also

enable saving on various costly items like new housing, lengthy and wide roads, etc. It has been found that developing countries, so long, have been spending about 40 to 45 per cent of a project cost on urbanization or directly unproductive items, or in other words two projects could be materialised with the same money meaning employment for double the population, if these unproductive items could be deferred. This is very important, for a developing country has to spend every unit of its coin in the most productive way.

Based on above cause of action the investment needed for creating employment opportunity for 95 million people is Rs. 9,5000 crores at the rate of Rs. 10,000 for each employment which is needed for Small Scale Industries. The total requirement for settling a population of 589 million people is now brought down to Rs. 205,000 crores or about Rs. 7,200 crores per year which can at least be conceived of.

RURABANIZATION VS. URBANIZATION

Urbanization indicates the highest form of modern living and by its simple connotation presupposes the existence of various infrastructures like metalled roads, piped water, sewerage drains and sewerage system, garbage disposal system, tenement houses and so on and so forth. In rural living almost all of these are totally absent. Moreover, even now, not to speak of rural areas even most of the urban areas in India do not have piped water, sewerage and drainage or garbage disposal arrangements. Urbanization, thus, not only creates additional problems, it tends to put strain on human energy in various forms. As for example, the time and energy spent for travel to and from place of work is directly attributable to urbanization where the distance from place of residence to place of work is considerable. Also, the stress and strain on human capacity, just to live within the complexity of urban life results in wastage of energy. Moreover, the pollution caused by smoke, noise and effluents from urban areas tends to cut short human life span.

Compared to above, living in 'rurban' areas will have much less problem. Being basically within a rural setting there need not be so much number and frequency of mechanized transport. Auto transport, though considered to have been a forward step towards civilization has created a lot of problems. Western planners are now visiting India and other oriental countries, particularly after the oil crisis, to learn how human energy can be properly utilized to solve the transport problem. Some of them even found in the bicycle an answer to various problems relating to traffic and transportation with motorized transport of huge number. Roads need to be of bigger widths and of more sophisticated quality, whereas bicycles or animal-drawn carriages need lesser widths of road with possibly only a

brick paved road; the maintenance cost also is so less as can be considered to be negligible.

Considering the problem of sewerage, drainage and garbage, piping them or making expensive arrangement for their disposal becomes a necessity in view of higher densities in urban areas. In other words, it is like creating a problem and then scratching the head for a proper solution. All these solutions are pretty costly and may be found to be only elitist. If the local systems in sewerage and drainage sector prevailing in India and other developing countries are taken into consideration, they are so good and have been existing from so long that even Western environmentalists have found them to be the best answer only very recently. In the field of water supply the National Environmental Engineering Research Institute have found various solution, for the poor and rural India which are satisfactory but improvised and needs to be recognized by Government through acceptance.

Housing also bears testimony to the same theme. While the minimum cost of a housing tenement in urban areas in 1975 cost minimum of Rs. 10,000 with cement, steel and other imitations of the West, it is still possible to construct house of the same covered area and life at a cost of Rs. 3000 to 4000 by using local materials and talent. It is but only a tragedy that many planners think that a structure built as per Western style can only be considered as a house, forgetting that the Indian architecture has its origin from older days when recent civilizations were yet to take birth. Rural people also do live under shelter though improvised, but more comfortably than the pigeon holes of urban areas having no ventilation or breeze. Moreover, in tropical countries sewerage putrefies more quickly and bacterial life can sustain longer than in Western countries. It is in this context that in Indian, houses, traditionally, the water closets were placed away from bed or living room. If that is done, costly fittings and fixtures for both rooms and water closets can be totally eliminated. Similarly, by locally disposing of garbage and sewerage in the fields scientifically, the fertility of agricultural lands can be increased.

Let us now analyse the existing interaction between rural and urban areas. In simple terms, agricultural products are sent to urban areas. These are consumed there itself or are transmitted to some other places where there is shortage and demand for the same. In the case of raw materials, those are processed in Urban areas as finished goods and are sent back to same rural areas for consumption. The industries play the part of converting the raw materials into finished goods for which the biggest market is the rural areas. The urban areas normally receive the goods either food or raw materials for industry and to send it back to rural areas for consumption. Few urban areas were also formed by the foreign rulers to administer the country. This is the pattern existing in India, since, the colonisers were only interested to draw as much resources from the rural

areas as possible. The profit out of trading or manufacturing went either in the hands of the colonisers or in the handful of people in the urban areas. The urban areas, therefore, became more and more rich whereas the rural areas became more and more poor. Those in favour of urbanization are only inadvertently supporting perpetuation of such a situation. To add a new chapter in this process the concept of intermediate market towns are being talked of only to preserve the supremacy of the theory of urbanization. It is common knowledge that towns below one lakh population are nothing but market towns and do not grow and are unable to sustain themselves. Their civic services and housing stock are in deplorable situation. These towns have failed to either improve themselves or to help the economic situation of the villages around them for two reasons: they are unable to bear the cost of the white elephant, *i.e.*, urbanisation was started there by the colonisers by setting up few administrative units without thinking of any source of income for the inhabitants, *e.g.*, industry or the like. The result has been that those towns are only counting their days to become obsolete. Some planners supporting the idea of intermediate towns are only repeating the same hierarchy as the colonisers did; the only difference being that while the colonisers did it wilfully to serve their purposes, these planners are advocating the same only because they cannot think of themselves living in any place other than the urban areas.

The existing concept of economic activity visualizes the cities or capitals as the starting point or prime mover and tries to see their problems satisfied. Then they go down the ladder of district towns, subdivisional towns, villages, etc. But the resource being meagre and the starting point being the capitals, no resources in reality can trickle down to lower levels. As a glaring example it can be stated that while Rs. 350 crores has been earmarked for development of Calcutta City in the Fifth Plan, not even one crore would be spent for the rest of the state. Another example is that—an amount of Rs. 1500 crores has been spent for Delhi's urbanization, but the total expenditure for the whole of the country is not commensurate to that of about 500 people to large ones having population of upto few thousands. If India has to prosper, these villages must have at least the following minimum amenities:

1. Arrangement for pure drinking water.
2. All-season good road at least for bullock-carts leading to nearest market centres.
3. Primary-secondary school depending on size of villages.
4. Health facilities depending on size of villages.
5. Credit/Banking facilities depending upon size of villages.
6. Fertilizer, pesticide, seed, etc., distribution arrangements.
7. Community facilities centre.
8. Post and Telegraph Office.

9. Electricity.
10. Consumer cooperatives/Ration shops.

The livability of rural areas will improve with the provision of these facilities and the migration to urban areas will automatically get reduced. Further, the productivity from agriculture will increase. Most important is that a service sector will be opened in rural areas providing a new channel of employment.

A big village where a market exists depends upon and has to cater for a number of small villages. The villages excepting being the trading centres for the villages products and of consumables for the villages are but a slightly bigger village and in most cases even do not have a bank, post office, secondary school or health facilities.

Next in hierarchy are some big villages wherefrom manufactured goods are distributed to the villages through the markets and village products received from the markets are stored and traded. Even these villages, which should really be called market-centres, do not even have proper minimum facilities as enlisted above for villages.

Above these trading market centres are the Sub-divisional towns which are also in a very bad shape of efficiency insofar as it relates to supporting the activities of the villages, trading centres and market centres.

Above them is the district towns, which now truly represent the market-centres. But even most of these district towns lack in Urban facilities.

The Metropolitan towns or cities are further above in the hierarchy; even these have a very bad state of urban services.

The manufacturing industries of consumer item are not available in villages, trading centres and the market centres; very few exist in some of the Sub-Divisional towns and only a few exist in the district towns. Whatever industries exist are located in Capital/Metropolitan areas except for a few industrial towns set up in resource-regions after Independence.

The result is that all the villages send the agricultural surplus to urban areas and get from these urban areas all consumables excepting agricultural products produced in that particular area. Even very unimportant manufactured goods have to be imported from urban areas. This not only involves lot of movement of goods and change of hands, but unnecessarily concentrates activities at undersirable location. Further, the urban areas with these industries attract people from countryside and for each of these rural population attracted to urban areas additional investment for urbanization is called for.

Another more realistic picture may be conceived of. Let us assume that each average-sized village will have the facilities stated before. Manufacturing industries of consumer goods of such scale suitable for a number of villages will be set up in the trading centres together with Banking,

storing and other facilities. Medium and large scale selected industries capable of supporting few number of these trading centres, *i.e.*, a large size village would be set up in the market centres. There shall be a complete ban on setting up of any new industry or expansion thereof in the existing urban areas with industrial undertaking. Only new industries that will be allowed except in trading centres or market centres should be at locations where other consideration of availability of raw material are the only criteria dictating the decision.

The above arrangement will mean industrializing the country side in conjunction with the agriculture revolution which will have a number of advantages as follows:

1. The countryside will become richer, as the profit from industry will be transmitted to the countryside.
2. The rural people will get manufactured goods at cheaper rate due to the proximity and also because the number of middlemen will be reduced.
3. The cost of infrastructure for the industries will be reduced since the cost of urbanization is much higher than for settlement in rural areas.
4. The transport need will be minimized.
5. The migration to urban areas will be reduced.
6. The surplus labour from agricultural sector can get employment in manufacturing industries.

The summarize, the actions suggested is to reverse the process now existing which was imposed on the country for the benefit and necessity of the colonial rulers. The hierarchy of the settlement pattern may now be compared as follows in terms of importance and emphasis placed on different classes of settlement.

LEVELS OF IMPORTANCE IN HIERARCHICAL PATTERN

<i>Existing</i>	<i>Proposed</i>
1. Metropolitan Cities	1. Villages—Most important
2. Capital or other cities	2. Trading centre with small scale consumer industry.
3. District Towns	3. Market centre with medium and large scale consumer industry.
4. Sub-divisional towns	4. District towns.
5. Trading Centres	5. Capital or other cities.
6. Villages	6. Metropolitan cities.

Thus the villages will be the starting point for activities rather than the

cities or urban areas and all subsequent action shall originate from the villages instead of from the cities as at present.

From what has been stated above, it may be seen that the logic of setting up market centres started by some people keeping the existing hierarchy of settlements will serve no purpose and will not be beneficial to India, since the same disparity between villages and towns or cities will continue to exist in all respects. Moreover, in the recent talk of setting up market centres, specific proposal of converting the existing trading centres into market centres has not got emphasis. On the contrary the emphasis is more on creating new market centres to serve and be subservient to urban areas. Market towns will, however, be beneficial if the hierarchy is reversed, *i.e.*, if industrialization is intensified in rural areas rather than in urban areas, together with setting up of consumer-industries to serve rural areas.

LAND USE POLICY

Land is the most important resource of any country. It is on land that human settlements take place and it is in this land that other resources are produced or made available. In general, the land-man ratio indicates how a country is naturally placed—whether rich or poor, unless other special factors exist. The single factor of land-man ratio as seen from the Table 2 below shows that India is poor because it has a very low land-man ratio.

Since India is already in shortage of land, every bit of land should be utilized in the best possible way avoiding wastage wherever possible. It should be considered to be a crime if land is put in wasteful use or kept

TABLE 2 LAND-MAN RATIO OF DIFFERENT COUNTRIES

<i>Name of Country</i>	<i>Total Area (Thousand Hectares) (10000000 Sq. M.)</i>	<i>Population</i>	<i>Land-Man Ratio Sq. Metres Per Man</i>	<i>Land-Man Ratio Acres per man 1 Acre= 4050 Sq.</i>	<i>Per Capita Annual Income \$ (1968)</i>
U.S.A.	936335	203184772	47000	11.6	3814
Canada	997614	20014880	500000	124.0	2247
China	956100	582603417	16200	4.1	247
India	326810	574000000	700	1.4	73
France	54703	49778540	11000	4.2	1940
Italy	30123	49903878	6050	1.50	1160
Netherlands	3662	11461964	6200	8.0	1619
Switzerland	4129	5429061	7600	1.9	2301
U.K.	24403	52708934	4650	1.12	1457
Australia	768681	11550462	690000	170.0	1991
U.S.S.R.	2240220	241748000	93200	23.0	—

under improper use or under-utilization. The problem, it can be seen, would be further aggravated with time since population will go on increasing although land will remain more or less constant. Keeping, therefore, the requirement of future generation, the land policy must aim at utilizing land in the manner of rationing. Further, since, man cannot live without food, the agricultural land must not be reduced. This is all the more necessary since the increasing population will require more and more food but productivity of land has a limit.

The land use policy should, therefore, take care of these factors. Viewed from these considerations, human settlement in developing countries where land-man ratio is low as in India must have to be of higher density than what the elitist planners generally desire. There must be minimum encroachments on resources generating land, *e.g.*, agriculture, mines, etc.

Properly drawn physical landuse maps should start from the national level. This should show the areas which should be preserved for agricultural, forest, water or mining purposes and encroachment will be considered to be criminal and punishable by law. Areas allowable for human settlement must be marked clearly.

Land use maps for smaller regions, cities, towns and villages should follow from the same and separately showing the use of land as a scarce commodity for perspective period of 25 and 50 years. Since urbanization will mean encroachment of agricultural land, new human settlements should be attempted on fallow lands, and since the same are distributed widely in rural areas, the new human settlements should preferably be in rural areas on such lands if other factors are not at variance.

MYTH ABOUT URBANIZATION AND ECONOMIC DEVELOPMENT

Many a people have an impression that if some people are made to settle in an urban area, economic development automatically takes place. They may have developed this belief from the urbanization in other developed countries. But the urbanization in those countries really took place consequent to industrialization. The industries gave rise to economic development owing to which urbanization could be developed and sustained. There must be a motive economic force which can absorb human settlement. The economic activity must precede the urbanization, if at all, it is to take place.

In India, there has been few such cases like industrial towns but in most other places, urbanization did not result in economic development (p. 14. speech by Dr. J.R. Rie on National Urbanization Policy). Another aspect is that the urban population must be able to pay for the services. "Urban development policies should be related to the level of employment and level of income earned by the people. Urban development facilities

have to be paid for by the city dwellers," said Sri Asok Mitra¹.

It is, therefore, obligatory to think of the employment and earning of the people before talking about urbanization. The myth that only giving rise to urbanization will take care of economic development, without pre-planning the economic development is fallacious.

URBANIZATION OR INDUSTRIALIZATION

It is true that there will be a lot of population increase in our country up to the turn of the century and that with more advanced method of agriculture more agricultural labourers will be thrown out of employment. But to speak, therefore, that urbanization is the only answer to tackle such a situation, is to evade the real problem. The real problem is to find employment for these additional population and to settle them. To talk of urbanization only without deciding how these people will earn their livelihood and whether that method will suit the country's economy or will be a well-knit solution considering the rural need, is only a biased attitude in favour of urbanization.

Since the only most plausible solution is through industry, we should rather think of industrialization—its possibility, its location, its financing, its relationship and dependence on rural areas, etc. Thus what we should really talk about is industrialization (after, however, giving the highest priority to agriculture) in all its aspect rather than urbanization. For it is only then that we will come to know about the magnitude of the problem, whether it can be solved, its dimensions in terms of space, financial involvement etc. Instead, only speaking of urbanization is only to camouflage the real issue without probing if the new people can really be settled through the process of urbanization. If, on the other hand, we can decide a national policy of industrialization, their location, linking it with the needs of rural population, our policy of additional settlement will automatically be solved, since most of the population will be located in or around these industries. The other settlements depending exclusively on trading, education, cultural pursuits, etc., will engulf less number of population and their locations, cannot possible be forecast now. Location of urban areas based on industries dependent on natural resources like minerals, forest, water, etc., are almost automatically fixed by availability of such resources. For the purpose of settling the growing population, therefore, it must be known in time scale as to how many people can be absorbed in industries in some type or other and how the remaining people have to be engaged. A pragmatic approach to these questions will give the direction for the human settlement problems. □

¹Mitra, Asok, in T & CPO, National Urbanization Policy, Ministry of Works and Housing, Government of India, p. 13.

*The Regional Spatial Urbanization of CMD and Region : Year 2000**

SANTOSH GHOSH

HUMAN SETTLEMENT has two distinct characteristics in developing countries. Instead of hierarchical and spatial distribution of population, people have concentrated in a narrow strip or small area of land which becomes primate city or they have scattered throughout the country or region with poor transportation linkages though occasionally there is an urban agglomeration at centres of administration or nodes of transportation. The concentration of population is generally near the sea coast, or main river with a vast hinterland, as a result of exploitation of colonial rule.

In 1971, there were 9 metropolitan cities in India with population above 1 million each but altogether they constituted 50 per cent of urban population of Class I towns (about 150 in numbers) and about 25 per cent of all urban population. Again 4 great metropolises—Calcutta, Bombay, Delhi and Madras with more than 20 million population contain about 20 per cent of all urban population in India.

This phenomenon is observed in Afro-Asian countries which have achieved freedom from the colonial rule. There are about 64 cities in Africa and Asia which have population above 1 million. Excluding some highly urbanized countries and some specially geographically located countries, the following observations can be made:

1. Most of the developing countries which have cities above 1 million have urbanization below 40 per cent of the total population and their gross national products comes generally from primary sector, *i.e.*, agriculture, mining, etc., in majority of countries, only 10-25 per cent of population live in urban areas.
2. The large cities with population of 1 million and above constitute the major portion of urban population generally more than 25 per

*Paper submitted at the Indian Chamber of Commerce Conference on "Calcutta 2000—Some Imperatives for Action Now", April, 1976. Published with the permission of the organisers of the conference.

cent but such large city population constitutes only a small portion of the total population of the country.

3. In most developing countries, the primate cities or large urban agglomerations are centres of trade, commerce, industry, education, etc. There is a marked disparity in per capita income, standard of living, employment opportunities in the regions, which are generally backward. There is concentrated human settlement with concentrated services and dispersed settlement. The primate city is generally 5 to 10 times the next large urban concentration.
4. In large urban agglomeration in the developing countries, about 20-30 per cent of people live in slums and squatter colonies with severe environmental deficiencies. The fringe areas or peripheral areas go through a process of transitional settlement.

The problem is more complicated in regions with only one major giant city of importance.

West Bengal had 44.4 million population in 1971. Within the next 30 or 35 years time this population is expected to be doubled. In other words, a 'Second West Bengal' is to be accommodated within the same land area. West Bengal suffers from unbalanced urbanization. Calcutta Metropolis has 67 per cent of State's total urban population, when it is excluded the urbanization falls below 10 per cent of the State population. The entire eastern India has very low level of urbanization and within about 1000 km. of Calcutta there is no major metropolis. As such Calcutta and its vicinity have become oasis in the desert of rural poverty. Out of 16 districts, the Planning Commission has identified 13 districts as backward with 83 per cent of area and 68 per cent of population.

Despite its squalor and decay, the per capita income of Calcutta is about three to four times the rural area and about two or three times the district, subdivisional and small towns. The developments in terms of social infrastructure like health or education and economic infrastructure like new places of employment, industry, etc., and physical infrastructure like roads and railway, etc., are poor in the districts both in terms of area and population.

Current unbalanced urbanization generally followed the premature industrial development resulting in an element of undesirable or socio-economically handicapped urbanization responsible for the creation of slums and squatters in the fringe and in the heart of the city.

Gunnar Myrdal, the Swedish Economist points out that urbanization in the developing countries is more a reaction against the lack of vigorous economic growth than a purpose to rising levels of incomes. This is a paradox of urbanization in the developing countries and it is being realized that widening the road, designing the single family residential pockets and highrise apartments, or providing the city with underground sewerage and

drainage should not be sole aim of environmental planning. Without integrating and developing comprehensive regional plan it will take decade after decade, and large amount of money and other material resources only to improve Calcutta. Urban development in large metropolis can not be isolated from economic development and from rural development in the region.

The Basic Development Plan for CMD, 1966-86, published by CMPO wanted an economic development programme with the physical development. It recommended: (a) The designation of areas for agriculture, industrial and commercial use and the installation of the infrastructure required for these uses; (b) The institution of programmes for using existing industrial capacity more fully; (c) The development of public sector industry; (d) The institution of a programme of economic incentives for encouraging private industrial growth in accordance with the development plane; (e) The creation of the administrative machinery necessary for the continued evaluation and planning of economic progress in the Calcutta Metropolitan District.

The Calcutta Metropolitan Planning Organization was aware that huge concentration of people and economic activities at one area becomes constraint for a balanced development. Social and economic costs of servicing such agglomeration become prohibitive. Therefore, together with metropolitan planning, there were vigorous regional planning activities. An articulated, systematic and integrated approach for such a plan strengthens rural urban economic interdependence.

The Government is keen to increase the overall level of economic development and at the same time reduce the gap between the developed and undeveloped districts of West Bengal. There is also the question of efficiency in terms of maximising the rate of growth and equality in terms of lowering the development differential between the advanced and the backward areas. The planning of districts and backward areas have been taken up under this context. At the same time, in a developing country, utilization of existing infrastructure becomes important and metropolis becomes a catalyst in the development of the region.

Calcutta Metropolitan Planning Organization long ago realized that effectiveness of a Calcutta development programme depends on the degree of development in the backward area. It emphasized a State regional plan for the spatial organization of population and socio-economic activities, planned exploitation of resources, planned industrial locations, and agricultural modernization with infrastructure development. A regional urbanization plan includes adoption of an integrated industrial location and new human settlement policy as a tool for ensuring improved employment opportunity and overall social and economic benefits of the large section of society. Several incentives are being provided for setting up small industrial units. New industrial complex at Haldia is being developed and strengthening

of industrial base at other towns is being taken up. The Government of West Bengal has launched growth centre projects for industrial development. Urban development programmes have been taken up in a number of district and subdivisional towns also.

But inspite of increased industrialization in India and the phenomenal growth of cities, the occupational structure has varied very little. In India workers' participation rate is less than one third of the population, while in West Bengal, it is further less. Percentage distribution of workers in the nine categories shows that cultivators and agricultural labours and workers in livestock, fishing and forestry was more than 60 per cent as per 1971 census. While in manufacturing it has declined and there is slight increase in the tertiary sector. Most of the industrial employment are in and around Calcutta. When the population will double and urban population more than three times in the State, despite tremendous amount of industrial development and growth of trade and commerce, the percentage will not increase much and only agricultural sector can offer employment. The FAO production yearbook 1969 provides figures for agricultural workers per 100 acres. In 1961, India had 36, Japan 87, Taiwan 79, Egypt 71 workers; the yield per acre for food process lbs/acre in 1968-70 was 845 lbs in India while such figures were in Japan 4585, Thailand 1670 and Egypt 3370 lbs. The comprehensive area development programme for agricultural modernization and rural infrastructure development is an attempt towards the increased productivity and employment.

The new urbanization and new balanced pattern of settlement of population must be based on agriculturization also. Modernization and development of agriculture and post harvest technology require institutional arrangement, new marketing, storage, transport and service centres and similar activities. Hundreds of such centres are required in the State. Whether one calls it urbanization or neo-ruralization, such facilities are essential and will provide sizable employment in tertiary sector. To reduce the demographic, economic, occupational and spatial imbalances, a two-way development strategy is essential considering the CMD and the region. In the case of Calcutta Metropolitan District, the strategy will be to sustain the economy and to adopt the transformation or renewal of the existing metropolis, while in the case of region and other towns, the strategy will be to promote growth. Growth and Development are two different and interconnected things. Growth may be described in terms of achievement of a series of targets whether in rural or urban area such as growth in income, industrial or agricultural production, etc., and growth generator or demands development.

In West Bengal there is apoplexy in Calcutta Metropolis and anemia in the rural region. When developments in rural area will infuse new blood and vigour, the problems of Calcutta Metropolis will be easier to solve.

The urban sprawl or uncontrolled fringe growth is to be checked and

considering the limited land resource and preservation of agricultural land, more intensive development will be necessary. Only one third of Calcutta Metropolitan District is built up and there is a scope for optimization of current infrastructure development.

It is said that cities without a responsive economic base can be a severe and critical bottleneck in the strategy of economic development especially when urban growth is based on a fixed multiplier of employment and income generation.

The basic objectives for urban development will be to provide an equity of urban service with minimum per capita social consumption for attaining a standard level of liveability throughout the State, to locate investment so as to maximize their return in terms of population service and then as catalyst for new productive investment and to utilize the multiplier effect of the major investment for growth and development as well as for diversified employment, to reduce operating and social costs in urban agglomeration and to utilize existing facilities and to coordinate physical development with social and economic development so that benefits go towards the lower level of society.

A comprehensive view of West Bengal Urbanization in the year 2000 is needed to determine the intensity and pattern of future development in Calcutta and the region. New growth and expansion of facilities will be strategy for other areas while metamorphosis of renewal of Calcutta in the context of socio-economic and physical framework will be the strategy for Calcutta.

WEST BENGAL URBANIZATION IN 2000

The problem of West Bengal is more acute. West Bengal has only three per cent of India's land area but more than eight per cent of India's population. In West Bengal, the density of population is about the three times the National average and the urban area density is the highest with about 25 per cent of urban population. The States like Gujarat, Maharashtra or Tamil Nadu which are more urbanized than West Bengal have much lower densities of population both in rural and urban areas. With limited land resource and high density human settlements, it is to be decided how population will be distributed with State land and urbanization policies, when West Bengal's population will be about double after the turn of the century.

The level and pattern of urbanization in 2001 A.D. will put tremendous pressure on limited land resource. There are different demands for land such as forest, water resource and mineral resource, transport and power, recreation and tourism, human settlement both urban and rural and agriculture land. The demand for land under different categories will reduce agriculture land. New technological breakthrough can yield higher

production, waste land can be converted into cultivable land, land can be reclaimed but any modernization will need land for infrastructure. The rural land reform, the distribution of land to agriculture labourers and ceiling on urban land have added new dimension to planning and will be the springboard of new economic and social development.

The following Table shows a tentative distribution of future urban population:

TABLE 1 DISTRIBUTION OF URBAN POPULATION 2001 A.D.

	1971 Pop. in Million	2001 Pop. in million Lower	Higher
1. Metropolitan Calcutta	7.3 (67%)	9.0 (30%)	10.6 (25%)
2. New Industrial area, Durgapur, Haldia etc.	0.5 (5%)	3.0 (10%)	6.4 (15%)
3. Rural units to be urban vide census or included under urban like CMD	0.8 (8%)	4.5 (15%)	8.4 (15%)
4. District and sub-div. and other towns	2.3 (20%)	7.5 (25%)	10.6 (25%)
5. New Agro towns and market towns	—	6.0 (20%)	8.5 (20%)
	11 m (100%)	30.0 m (100%)	42.50 m (100%)
	25% of total	40% of total	50% of total
	44.4 m	75.0 m	85.0 m

*CMD includes about 10 per cent rural population. In 2001 total CMD population will vary between 10.0 m to 12.0 m.

It may be pointed out here that conventional urbanization, will not be more and the trend is slow in India and West Bengal. In 1941, a little above 20 per cent people lived in urban areas in West Bengal and in 30 years' time in 1971, this has increased by little above 4 per cent. With this definition West Bengal Urbanization will be between 30-35 per cent of population but here agricultural based urbanization is also included.

The future urbanization will be at different tiers:

- (a) Metropolitan Calcutta where improvement, renewal and new provision of spatial development will continue to enhance the functioning of large economy which acts as catalyst of regional development. The demographic growth and urban sprawl will, however, be limited and though there will be an absolute increase

- in population, the percentage share of State's urban population will gradually be reduced. There cannot be a population of 16 to 20 million or an expanded second Calcutta.
- (b) District and sub-divisional towns where growth and development will be encouraged so that these urban centres become nodal centres in the subregion and polarization process will be adopted.
 - (c) New industrial towns and growth centres—these areas will be in backward and special resource regions and perhaps on the basis of threshold analysis.
 - (d) Agro-cities and market towns—one market town within 150 or 250 sq. km. of area. Agro-cities with market towns with service centre for agriculture.
 - (e) Distribution of urban functions in rural area: (i) cellular pattern or hierarchical distribution so that the minimum needs of physical, economic and social infrastructure is spread throughout the State; (ii) development of isolated areas due to the peculiar human settlement pattern for geotechnical and climatic reasons; (iii) skeletal linear corridor with goods and services to be linked with transportation and utility system. Some of the areas will be urban. There will be increasing cost of maintenance and servicing the large urban agglomeration. Even with minimum provision of facilities for all urban areas by the year 2001 A.D., huge capital investment will be required. The cost of land in medium and small sized towns are, however, less and the development of a labour intensive resource saving technology will reduce the cost of urban development.

But this will not be an easy task. Under the traditional economic development system preponderance of the centralization tendencies prevail and create difficulties in planning a balanced demographic and economic growth. The process of concentrating production and common servicing into agglomeration of settlements cannot be presented and the growth of nodal centres of social facilities and technical services can help in the promotion of both industrial and agricultural development in the macro-regions. The hierarchical network and diffusion of economic and socio-cultural aspects will reduce the current metropolitan concentration. But this is difficult to achieve in the State of West Bengal where size of towns is too small compared to Calcutta to become counter magnet. A polarized concept of development may be needed. The entire system will be a sort of regiopolis in contrast with Calcutta. Instead of city by city, project by project or sector by sector approach a network of cities or regiopolis approach with spatial budgeting system is suggested.

TABLE 2 TENTATIVE DISTRIBUTION OF URBAN POPULATION 2000 A.D.
(INCLUDES AGRICULTURAL BASED URBANIZATION)

	<i>Population 2000 A.D.</i>	<i>Percentage of urban population</i>
1. Calcutta Metropolitan District including rural fringe.	12 million	30
2. Northern network of cities.	4 million	10
3. Haldia Midnapore Kharagpur urban corridor.	4 „	10
4. Asansol Durgapur Burdwan urban corridor.	4 „	10
5. Western West Bengal network of cities.	4 „	10
6. Middle West Bengal network of cities.	2 „	5
7. Isolated urban centres, agrocities and market towns.	10 „	25
	40 million	50 of 80 million

If some people dream of Second Calcutta it will be in the outside Calcutta region but this new area will not be 'Calcuttanization'.

INTERMEDIATE URBANIZATION AND TECHNOLOGY

But what will be the status of technology? While a large number of settlements are built with an indigenous technology and even in Calcutta, a large number of houses are katcha, a large area unsewered and roads are unmetalled. The technology adopted in urban development is very sophisticated and with limited resource it will take years to build a good network of infrastructure. The rising cost of construction, limited quantity of essential building materials like cement and steel demand an appropriate pattern of technology, especially to meet the needs of pseudo-urbanizations, semi-urban and transitional settlements.

The intermediate urbanization problems are to be solved through an appropriate technology which may be a combination of different technologies. Intermediate urbanization should not be confused with intermediate technology. As the urbanization is viewed as a process not a product, the one will be the universal system of facilities hitherto known as urban facilities (piped water supply, metal road, etc.) to be provided to both urban and rural areas. This will be connected with the minimum needs programme in urban as well as in rural areas. And the major emphasis will be on the economic functioning of such places and not merely on physical deficiencies which is generally the traditional town planner's view on the

improvement of the physical infrastructure. The low levels of technology and high population resource and percentage share of population living in rural areas and dependence on agriculture will influence the planners to view the process of urbanization as one based on universal modernization of agriculture also. Between the industrial development and modernisation of agriculture there will be a service sector, the growth of which will lead to urbanization also.

The specific areas where the intermediate process will be applicable are: (a) within the cities where slums and squatters have developed shelters built of shack materials and in areas deficient in environmental facilities; (b) In the fringe areas of the cities either on the fringe of urban agglomeration or outside the standard urban areas or in between the urban corridors which are likely to be urban within the next few years. This may be termed as 'agrovillage' or 'agro-cities' where the production in such villages in dairy, poultry, handicrafts, etc., will be oriented to the urban need. On the other hand, they will utilize the resources out of waste and garbage produced in big cities. There will be bio-industrial centres for recycling of such waste products. This will be a resource conserving plan and the technological process may include water recovery from the waste water, recovery of materials and heavy solids, land reclamation and sludging and composting in agriculture and development of poultry, dairy, slaughter house products, etc. The recycling of waste is, however, a sophisticated process.

Most of the economic and physical development programmes utilize capital intensive advanced technology. In many cases these are undesirable in the context of low financial resource, vastness of problems and unemployment. Labour intensive and capital saving, simple technology which can be adopted in large scale is to be developed. The planning and improvement of indigenous technology is, however, not an easy task and in many cases this is still a primitive technique and it requires some development with the application of science and technology. Choice of appropriate technology will be a challenging task for intermediate urbanization or places of future human settlements. Modern technology is urban oriented technology with easy supply of capital, technical manpower and materials but in India's situation technology will have to be developed with orientation to rural people and rural migrants and it should be based on self reliance. It can have wider application with wider economic development rather than a few prestigious projects.

SCENARIOS FOR INTERMEDIATE URBANIZED AREAS, 2001 A.D.

The following are the scenarios:

Roads : Connecting roads of standard design, arterial road or network at $\frac{1}{4}$ to 1 mile within 50 per cent

- metal coordinated with rickshaws and bicycle and pedestrain walkways.
- Schools : Open and semi-open air school, built of local materials. Used for adult education and mass recreation at night also. Television media for education in hall. Vocational training and entrepreneurship.
- Health : Mobile vans for preventive health, local health workers. Health centre at one location but small units scattered. Medical storage at intermediate locations.
- Housing : Cluster planning—single storeyed row with intermediate technology, multiple skeleton housing. Centralised kitchen and food services.
- Utilities : Large and medium sized septic tank. Water supply (intermediate technology from well and tank, sewerage and sludge for irrigation and agriculture).
- Employment Centres : Service tertiary sector—Small industries and handicraft—dairy and poultry, fishery—self-help method in construction.



Urban Management and Local Government : Aspects of Recent Reforms in Nigeria

HARRY A. GREEN

IN A federation, urban centres are the crossroads of federalism and the major urban centres can be distinguished by their complex inter-governmental character. This is an essential fact for the understanding of modern urban administration and the implications of the recent local governmental reforms in Nigeria.

Traditional local government, wherever found, has been concerned with the conduct of a number of activities, almost always entirely local in character, essential to the needs and well being of its citizens. Under conditions of natural population growth, minimum changes in economic structure and activities, and a slowly evolving social-cultural system, political and governmental activities likewise change very little. However, under conditions of rapid change (major technological changes, rural to urban migration, economic base changes, employment structure changes), human needs and the means to provide for those needs also change. When the social, economic and cultural systems change so must the governmental system change.

The major manifestations of rapid change, and all the problems that change brings, inevitably are found in the urban centres. The degree of urban complexity tends to be a function of size and scale of operations. The greater the population size and the larger the scale of modern sector activities, the more complex the urban society becomes. The more complex urban society becomes, the more difficult it is for government to respond to the problems created by changes and to the changing needs (demands) of citizens for public services. And, although more than offset as a desirable political objective, federalism almost always ensures a more complex governmental response to urban change than unitary systems.

WHAT IS URBAN ADMINISTRATION?

There has been a tendency to interpret urban administration as local

government administration in an urban setting. This is an unfortunately narrow interpretation of urban administration. Not only does it tend to limit our conceptual awareness of the inter-governmental nature of urban administration, it also tends to obscure the problem of creating appropriate planning and managerial institutions to respond effectively to the urban crisis in Nigeria.

The word crisis is used advisedly here because every *major* urban centre—the decision capitals of Nigeria—faces potential breakdown. No purely local response, irrespective of how competent and well financed, will be able to respond adequately to this challenge. The challenge has holistic character that transcends local competence and requires a systems response. The response of local government in Kano, Ibadan and Port Harcourt (or Yola, Akure and Minna) will never be adequate to manage the problems that emerge concomitantly with rapid urban development. The basic reason for this is that a good part of urban development, while spatially local, is regional and national in significance. Moreover, the nature of federalism is such that governmental responses to rapid social and economic change are almost always intergovernmental.

Thus, while urban administration must be comprehended from a local and spatial perspective, it must not be limited to that. Applying a systems concept, urban administration must be comprehended from at least five different perspectives: the national urban system, the regional (State) urban system, the local urban system, the individual urban service (or function), and the urban organization.

Viewed from the federal level, there is the complex system of urban centres that provides the predominant focus for a substantial volume of modern sector investment and development. At the state level, there are 19 regional systems of urban centres that constituted a substantial development focus for each State Government. At the local level, there is each specific urban centre that can be comprehended as a system at its level and a sub-system of the regional system. Thus, the national urban system presents itself as a type of three-tier interactive structure.

However, the systems perspective is not as clear as this would suggest. The Federal Government will be more concerned with the centres of greatest modern sector involvement and national significance. At the regional level, the state governments also will be more concerned with most of the same centres because many of them, if not all, will have major regional significance as well. The State Governments, however, will have a major concern for other urban centres that have only minor national significance.

Local urban systems are a matter of direct concern for local government which have a primary responsibility for urban governance. Whatever happens in the local urban community is a matter of major concern for local government and much of the future developmental thrust of local

significance has been devolved to them. However each local system will bear the imprint of the policies and programmes of State and Federal Government. As indicated above, this will be more or less important depending upon the size and significance of each urban centre but virtually all will reflect the influence and impact of higher government.

The fourth and fifth perspectives of urban administration focus our attention on the complexity of federalism, the total urban system and the interactive structure. Any particular function or service can be considered as a system for purposes of comprehension and analysis. However, many functions are not necessarily only urban, are not necessarily performed by only one level of government and may be local only in a spatial sense. Thus, the functional and organization perspectives may overlap or interpenetrate different levels in the urban system by different levels of government.

For example, the function/service of electric power is provided throughout the total urban system by a single Federal organization that penetrates and influences the system at every level. On the other hand, organizations of the Federal, State, and local governments, as well as private ones, are involved in providing health and medical services. Other functions are similarly shared by Federal/State and State/local governments and, of course, the lion's share of development finance is derived from the Federal Government. Thus, urban centres are the crossroads of Nigerian federalism. *While this is generally understood, it is seldom appreciated as a major problem of the management of local urban systems.*

We must never lose sight of the fact that the performance base of the urban system is the large-scale formal organization whether located at the Federal, State or local level. Government ministries, corporations, special authorities and local government departments are the organizations that perform urban functions and collectively become the urban service delivery system. Each such organization can be viewed as a system and as a sub-system of the larger organizational world. However, most often it will not conform easily to the concept of urban systems presented above. Frequently, a conflict tends to emerge between the role of an organization within its organizational system (e.g., NEPA* as a federal organization) and its role in the urban system (NEPA vis-a-vis the need/demands of particular urban centres).

This points out two major problems that must be addressed when attempting to improve urban management. First, there is the managerial effectiveness of each organization performing a major function (or some aspect thereof) that can be enhanced by improvements in general personnel competence and modern management approaches. And secondly, there is the need for linkages and connective planning among institutions performing

*National Electric Power Authority.

urban functions to bridge the gap between their organizational system and the urban system. A policy and decisional framework that links development planning, major programmes, and budgeting may be an appropriate approach. However, it seems likely that many inter-ministerial and intergovernmental committees, both permanent and *ad hoc*, will be needed to deal with special types of problems.

As the above shows, urban administration is not a simple process but rather one of the most complicated and important aspects of economic and social development. The systems approach allows us to perceive this complexity and to realize the nature of the management problem. Thus, urban administration is concerned with the management of the national urban system, all of the regional systems, and all the local urban systems. The processes of government generate triadic policy and programme relationships that greatly complicate urban management. For our purposes, a working definition of urban administration follows:¹

Urban administration is an intergovernmental process involving the whole range of organizations and activities for planning, decision-making and management at all levels and for conducting public functions and providing public services related to all urban centres in a society, collectively and individually.

LOCAL GOVERNMENT REFORMS, 1976

The purposes of the recent reforms appear to be three in number. First, there is the objective of encouraging more in development and local initiative as a prelude to the return to civilian rule. Secondly, there is the desire to promote democratic self-government throughout the federation. Thirdly, there is the objective of establishing organizationally and financially viable local government to meet rising expectations of service/function performance. As Brigadier Yar Adua wrote in the Foreword to the *Guidelines*:²

In embarking on these reforms, the Federal Military Government was essentially motivated by the necessity to stabilise and rationalise Government at the local level. This must, of necessity, entail the decentralization of some significant functions of State Governments to local levels in order to harness local resources for rapid development. The Federal Military Government has therefore decided to recognise

¹For a fuller treatment of this matter see Harry A. Green, "Urban Management in Nigeria: A Systems and Organizational Approach", *Quarterly Journal of Administration*, July, 1976.

²Federal Republic of Nigeria, *Guidelines for Local Government Reform*, Kaduna: Government Printer, August, 1976.

Local Governments as the third tier of Governmental activity in the nation. Local Government should do precisely what the word government implies, *i.e.*, governing at the grassroots or local level.

The extent to which local government may govern at the local level is defined in terms of the functions that will be devolved to local government. A number of functions and/or activities are listed as the sole responsibility of local governments (Appendix I). Others are listed as local government responsibilities although "State Governments and other organizations may also perform part or whole" depending upon the capability of local governments (Appendix II).

At the outset, it should be noted that a number of functions are not included in either list. Notable among these are: electricity and energy, communications, urban water supply, curative health services, urban roads, police, and secondary and university education. These are both Federal and State functions and virtually all have an important urban significance. Therefore, in virtually all urban centres, important public services will be provided by all levels of government. Unless appropriate inter-organizational decision and action structures can be created, local governments may be handicapped in their efforts to create viable urban communities.

There are other possible constraints on the extent of effective local governance. These have been the traditional problems of local government: structure, personnel and finance. The Federal Military Government was concerned about viability and deals with this by trying to control minimum population size, establishing a uniform structure, providing more revenue sources including a large preliminary grant of N 100 million, and by upgrading staffing arrangements. However, the capacity of local government to take over functions in the second list depends upon the capacity to overcome these traditional problems.

LOCAL GOVERNMENT AND PUBLIC SERVICES

All local governments are not local urban systems but all local governments are concerned about urban centres of varying number and size. Therefore, all local governments to varying degrees must be concerned about the urban crisis as it affects them and about the problems of future urban physical development and urban population growth. Indeed, it is possible that new developmental activity in local government headquarters will motivate a new wave of rural-to-urban migration where these centres become terminal points or staging grounds for migration to larger cities.

As suggested above, an important consideration for local governments is the impact of future Federal and State investment decisions. If future industrial investment follows a more decentralized pattern than previously,

we can expect quite a different impact than if it essentially continues to follow the concentrated pattern of the past. A major question arises as to what extent local governments will participate in such investment decisions and to what extent they will become active agents seeking to bring investment projects into their area.³

Whatever emerges, the requirements for public services, and the types of public services, will be influenced. As previously noted, several key infrastructure services do not fall within the purview of local governments, most notably electricity, urban water supplies, communications, and certain aspects of transport. Moreover, many public services must inevitably be shared with the State Government or special State authorities and corporations. For example, it seems inconceivable that the control of water and atmospheric pollution by local governments can be effective without the overriding influence of a State authority. Even then, ecological pollution of this type is not limited to State boundaries but rather covers many parts of the nation. As more piped sewage systems are developed and as more industrial waste is produced, the level of pollution in Nigerian waterways will increase. Many local governments are unlikely ever to have the technical personnel to set standards and control compliance.

In this context, it is useful to consider 'the law of external effects' put forward by the economic planner Jan Tinbergen as a guide to the allocation of functions and the level at which public decisions should be taken. If the effects of a decision are such that there are negative 'spillover effects', it may be assumed that the decision was taken at too low a level. For example, if property rating is set low as a matter of policy, for commercial and industrial firms, in an attempt to attract more tax base and create more local jobs, and this results in a loss in tax revenue and local jobs in another local government area, then it may be argued that the external effect of this decision was to influence adversely another area. Yet another example pertains to air and water pollution control. If the standard of air and water purity is lower in any one local government area, industrial firms and private individuals may legally pollute both air and stream. Since both air and the water affect other areas, and particularly the water may be unusable or more costly to use, the decision to set low standards has created cost externalities that indicate too localized a decision. In cases where 'the law of external effects' produces *negative consequences*, an automatic process to consider the re-allocation of functions should be put into effect.

Apart from the cost externalities of local decisions, there is the matter of local capability to perform certain functions. In the short run at least, not very many local governments will be able to take over town and

³The Birnin Gwari Local Government Council of Kaduna State recently announced that land would be provided free for any State or Federal development project site there, *Daily Times*, March 28, 1977, p. 11.

country planning, public housing, piped sewage systems and environmental pollution control.⁴

The experience to date suggests the absence of sufficient manpower even at State levels to conduct these public functions except on the limited scale now undertaken. As the scale of activity increases, local governments will find themselves competing with the Federal and State Governments, Universities and the private sector for technical expertise. In the short run, there will be an insufficiency and local governments will find themselves at a competitive disadvantage. The largest local governments may find themselves not too badly disadvantaged *provided* they recruit from a national skills market rather than a local one. Even, here, however, the past image of local government is likely to make it a last choice for most candidates and thus there is the danger that local governments may end up with technical specialists unable to secure employment elsewhere. If the future role of local governments is to be a truly important one and if they are to be effective in this role, *this situation must be avoided*. The image of local government, and particularly urban local government, must be improved.

There is no magical allocation of functions among levels of government that fits all times and all places. Moreover, as frequently noted, population size, density, resource base, and geographical location are factors of great importance influencing the type and number of functions that local government can perform. Moreover, the relative degree of urbanness, usually measured by density, is another important indicator of functions performed, services offered, and their nature. Also, the question of efficiency becomes more and more important during periods of rising cost and inflation.

Studies in the United States and other countries have indicated that there are definite economies of scale in water, sewage, and electricity services and to a lesser extent hospitals.⁵ Therefore, it can be hypothesized that large systems transcending local government areas would result in lower cost public services. However, this hypothesis will be influenced by a number of factors. First, how large does a system have to be to effect economies of scale; and, what constitutes a service system? For example, urban water supplies, and to a lesser extent rural water supplies, were managed by a single corporation in the former Western State. This resulted from the action of State Government in 1968 to take over all water supply schemes from local councils. At that time, there were 52 different

⁴Although the matter of the allocation of functions seems straight forward, there are likely to arise many problems. As a case in point, consider the conflict between Lagos State Government and the Mainland Local Government Council over the Ojuelegba market, *Daily Times*, February 25, 1977, p. 32.

⁵Harry A. Green, "Efficiency in Urban Administration: A Conceptual Approach". A paper presented to the National Symposium on Productivity and Efficiency in the Public Service, Ife Nigeria, July, 1976.

schemes in the State, 39 of which had a capacity of less than 5,00,000 gallons per day, 5 between 500,000 and 1,000,000 gallons per day, and only 8 schemes with 1,000,000 gallons and over. The mere fact of establishing organizational unity, however, does not create a system and does not guarantee economies of scale. The average cost of "production for water processing plants below 1 m.g.d. is not likely to be significantly different whether managed at a local or regional level. However, a regional perspective is important for the overall management of the supply of water and its quality.

Moreover, there is little in the literature on the economics of public services that would suggest the inefficiency of local electricity *distribution* systems. There is a need for a system of national distribution and, for obvious reasons, this cannot be done without a national orientation. However, there do not appear to be economic reasons why local governments and particularly urban local governments, couldn't take over, manage and expand the local distribution system. The limiting factors, as noted above, probably would be personnel and to a lesser extent finance.

Moreover, there is a counter-argument to the present approach that should be considered. Theoretically, there are limits to the growth of all things including organizations. These limits may not be seen so much in the decline in size (measured by personnel and expenditure) as in the decline in both effectiveness and efficiency. The continued interruptions in electricity supply in many urban centres may be explained by many factors. However, the possibility of too large an organizational system should not be overlooked. To the extent that this is true, large urban centres may be called upon in the future to take over and manage their own distribution systems.

When we move beyond these 'vertically integrated' services—water, electricity, sewerage system—we have to consider whether or not other services may be more or less local than apparent. Piped sewage systems certainly have regional implications as well as economic efficiency implications. However, there is no theoretical reason to debar local governments from managing a part of the system. Sewage collection lines, for example, could be a local function while the treatment and disposal could be a regional responsibility. Or, several local governments could create a co-operative sub-regional sewerage treatment and disposal plant to achieve high quality and lower cost than they could achieve separately.

This suggests that some functions may be more effectively performed if they are divided *provided*, that the division is effected in a rational action framework oriented toward achieving economies of scale and avoiding cost externalities. The inevitable conclusion is that some aspects of public services are more local than other aspects. Refuse collection, and perhaps nightsoil collection, are more local in character while refuse disposal and nightsoil disposal clearly have regional implications. The methods of

disposal will have an influence on environmental quality, public health and public aesthetics that are much more likely to result in cost externalities than benefit externalities.

The foregoing has raised a number of issues relative to local government reforms and the allocation of functions. Few distributions were made between rural local government and urban local government in terms of types or number of public services provided. Indeed, the *Guidelines* stipulate that 'Urban Local Governments should be exceptional', and that any 'special requirements of towns within Local Government areas can best be catered for by subordinate Town or Ward Council.'⁶ Until more is known about the actual pattern, little can be said about how this guideline has been implemented.

However, since subordinate councils need not necessarily be urban, local governments with large areas may, in fact, end up creating a fourth tier of government. The question naturally arises: to that extent will these subordinate councils, whether urban or rural, be administrative as well as political? How extensively will they perform functions and provide services? Will this simply create greater fragmentation at the local government level? How will resources be divided as between subordinate councils? How will social equity be achieved?

THE MANAGEMENT OF LOCAL URBAN SYSTEMS

With the recent reforms, the role of local government in providing urban services, in influencing the promotion of other urban services, and in the management of future urban development inevitably will become more important. Several significant problems concerning the management of local urban systems are likely to emerge.

First, there is the existing problem of service inequity between rural and urban areas and within most urban areas. On the one hand, there is the need to effectuate the national policy of an urban-rural development strategy to contain future rural-to-urban migration and to redress the service inequity within the context of a politically derived needs structure. On the other hand, there is the need to consider the problems of service balance within the urban areas. There is no solution to the urban water problem if more and more water is consumed by a small percentage of total population while total productive capacity rises. Service expansion should be oriented to redressing this imbalance as well as supporting local development.

Another major problem is the interaction of Federal and State agencies at the local level, particularly in the urban centres. Presently most of the infrastructure services essential for modern urban development are provided

⁶*Guidelines, op. cit.*, p. 4

by Federal and State agencies: electricity, communications, urban roads, public housing and housing finance, water supply and sewerage systems, and some important social programmes (e.g., hospitals). Therefore, this presents a two-dimensional problem.

First, for those major urban local governments capable of taking over some of these functions (housing, piped sewerage) and others (town and country planning) there is the matter of working out the transition from State to local. Secondly, for those local governments not yet capable of the take-over of these functions, there is the problem of planning and projecting when (and if) these functions will be taken over; 5 years, 10 years?

However, whether these functions (Appendix II) are taken over or not, there are significant functions remaining at the Federal and State levels that have a major impact on local government administration, and particularly, the management of local urban systems, and on future local development. Some effective policy/programme coordination and integrated problem-solving capacity must be evolved if the myriad agencies are to be remotely successful in solving contemporary urban problems and guiding future urban development. It must be recalled that the urban administration is essentially intergovernmental.

The Third Plan envisages a greater role by State Government in the management of the nation's urban centres. One aspect of this was to focus on improving urban planning including regional plans, urban master plans, and the lay-out of residential, commercial and industrial areas. This may be one way of achieving more effective coordination. However, there are two levels of coordination for which a necessary institutional framework is required. First, there is the coordination of general policies and programmes that tend to be comprehensive and macro-analytical. The planning process and plan documents as policy instruments are an effective approach for achieving coordination at this level. But it should be noted that plans are hypotheses—no more than desired outcomes. These policy instruments should be flexible enough to be corrected by new information that is derived from implementation efforts.

The second level of coordination is at the action level. Urban master plans, otherwise known as blue print planning, are not very effective instruments for coordination at this level. Frequently, master plans design the urban future based on a series of assumptions which flow from a number of hypotheses unsubstantiated by facts. This tends to be more true in rapidly changing environments.⁷ Therefore, the concept of master plans or blueprint planning should be modified to include a more pragmatic approach to urban policy analysis and urban programme coordination. Urban indicative planning is still needed and should be continued; it should be

⁷Robert Friedmann, "The Future of Comprehensive Urban Planning", *Public Administration Review*, Vol. 32, 3 (May/June 1971).

based on a firm foundation of relevant, current urban data collected on a continuing basis. This will allow periodic corrections and provide management information relevant to urban institutions (at whatever level) operating in the area.

Achieving policy, programme and administrative coordination is one of the major problems for effective action within the urban management system. This is important at every level—Federal, State, local—but perhaps most important at the local level. However, if it is n't achieved at higher levels, it is unlikely to be achieved at the local level.

To understand and manage the consequences of future urban development, it is imperative to create the managerial capacity to identify and evaluate all Federal and State recurrent and capital expenditures in each urban area. This will be important for future urban and regional planning and for working out more definitely a significant role for local government.

An important idea for more effective local management is to build an effective management information system by linking together, the planning, budgeting and accounting sub-systems. The integration of these processes will permit the collection and analysis of cost effectiveness data that can provide the basis for improved decision-making generally and particularly resource allocation decisions.

When N10 million is allocated to a programme (a collection of projects), the use of programme-performance budgeting will allow achievement to be measured by relating results to costs within a particular time period. Management/cost accounting will provide the medium for costing results and identify *cost* or *responsibility* centres within the organization. If a cost centre involves work on more than one project or programme, a separate of accounts for each project element is desirable. This sets responsibility for *resource consumption* as well as achievement.

Overall planning, budgeting and accounting processes should be seen as a unified *management control system*. Moreover, as much as possible they should be made compatible with budget and planning categories used by Federal and State Governments.

More than ever, local governments must have strong managerial capacity if they are to guide and control the future development of their own local areas. Problems inevitably will arise, as they do in other Federal Republics, for which no one or no institution seems responsible. Local government must have a *crisis management capability* to deal with such problems.

Local governments may have to assume a great responsibility for social welfare. Ostensibly, there doesn't appear to be much that they can do about chronic unemployment or the socio-economic consequences of unemployment. Yet these consequences will be felt in the local community. Where does responsibility lie? Problems such as this can be ignored and

responsibility avoided; however, consequences cannot. If local governments are to make a more positive contribution to urban administration, they must be prepared to be assertive, aggressive and innovative. In fact, if local governments can avoid over-bureaucratization they can become the most innovative level, thus justifying the emphasis on local initiative in the *Guidelines*.

RETROSPECT AND PROSPECT

It may be said that there are four realms of urban administration: Federal, State, local and the interactive. In the Federal realm, most attention is focussed on direct Federal responsibility such as the new Federal territory and on the establishment, coordination and financing of urban policy throughout the Federation. Urban administration at this level involves those ministries and agencies with responsibility in these areas.

In the State realm, there are similar responsibilities only on a regional basis. State governments are directly concerned with the management of the capital cities, the regional system of cities, and the role of various ministries and agencies in specific local urban centres.

In the local realm, local government is concerned about its responsibilities for local urban services and local urban development. If it is a predominantly urban local government, most of its activities are focussed here and coordination of activities is a spatially limited matter. If local government has several urban centres in addition to rural councils, coordination becomes a more complex problem and the problem of equity and balance looms large.

The fourth realm—the interactive is the realm in which the activities of all three levels converge. The precise nature of this realm can only be defined empirically, and then, it must be recognized as a dynamic realm, constantly changing, requiring re-definition. This is the most mysterious of the realms because it is more murky, less clear-cut. But this is the realm that requires the greatest understanding, the greatest capacity for coordination, and for innovation.

This realm may constitute an area of overlapping or duplicated functions but it is also likely to involve the different levels of governments performing different aspects of a major function, (or all aspects of a major function) that to make sense must be comprehensively linked to other functions. For example, housing, sanitation, and community health are clearly linked together. Housing, job location and traffic congestion are clearly linked. Housing and all infrastructure services are clearly linked. Each one of these sets of linkages, involves some different agencies in each realm. To ensure an effective and efficient local urban system, greater progress must be made toward *connective planning, budget planning and*

management coordination. Since the impact of this is at the local level, this realm of urban administration needs immediate attention; the local government reforms make it even more urgent.⁸

A careful perusal of the *Guidelines* does not make clear the role of 'planning and development boards' in the large cities or where they exist on a State basis (as in Lagos and Bendel) their role in smaller urban centres. The *Guidelines* suggest that the need for these authorities 'arises when the city is important to an area for outside the confines of its Local Government—affecting may be the whole State' (p. 15). It is suggested that coordination between the board (or authority) and the Local Government 'can be achieved by cross-membership' and 'by close working relationships between officials of the two organizations'. Moreover, the Ministry of Local Government in each State will be responsible for supervising both local government and the planning and development boards. This should provide some cohesiveness at both levels. However, it must be noted that coordination is not easy and requires considerable staff time. Chronic personnel shortages will militate against effective coordination.

The problem of inter-governmental coordination is a matter to which all State Governments should address themselves immediately. It should be noted that 'town and country planning' remains a function of both State and local governments. Moreover, regional planning, in the context of regional-local development, obviously remains a State function.

A matter of great interest is that the Federal Ministry of Housing, Urban Development and Environment (FMHUDE) was not mentioned in the *Guidelines*. This is significant because FMHUDE has national responsibility for the coordination of urban policy but was not considered to have any role in guiding and controlling the future relationship between urban development and local government. It is obvious that the Federal Government will continue to play a major role in formulating, implementing and financing urban policy. Therefore, it seems a major omission that its concern about Federal urban management was not indicated.

Since the large scale formal organization is the performance base for urban institutions, it is time to renew the recommendations of the Udoji Commission.⁹ It is indeed possible, perhaps imperative, to begin a systematic effort to apply modern management techniques to urban, and local

⁸In Appendix III, I have constructed a number of questions as a guide to improving the effectiveness of local government in Urban administration.

⁹This Commission, formally entitled Public Service Review Commission, made wide ranging recommendations for the improvement of the Public service with a special emphasis on modern management techniques. See the article by Harry A. Green in *Journal of Management Studies*, Ghana, Oct., 1976.

government administration. Programme-performance budgeting (PPB), coupled with more effective development planning may be one method for controlling and linking the organizations of the urban management system.¹⁰ The use of PPB inevitably leads policy makers and administrators to a more holistic comprehension. Moreover, performance data inevitably provides the basis for an overall improvement in managerial capability.

It is essential for local governments to define as precisely as possible, their objectives—why they exist and what they intend to do. Further, it is essential that a process for reconsideration of their objectives be implemented to ensure that activities always follow purpose—rather than continue long after the original purpose has changed (the triumph of technique over purpose).

Moreover, the definition of objectives is merely the first step in achieving a more comprehensible framework of local activities. Because of the chronic shortage of resources, the ordering of priorities and their justification is just as essential. The setting of priorities should be linked to the budgeting/costing process and to forward planning. The budgeting of programmes and projects must be clearly linked to objectives and priorities. Monitoring of performance and evaluation of results in terms of objectives is likewise essential in this context.

The most fundamental defect of local authorities in LDC's and particularly urban local authorities is that they have to define their purpose in the modern sector. Although there are many reasons for this—cultural, social, political—these belong to the past and not the future. Most urban local governments must focus on present and future purpose, if the country is to be effective in the management and control of the urbanization process.

The foregoing should not be interpreted to suggest that this will be easy. If it was easy, urban management would be efficient and effective already. This is further complicated by the fact that urban management in its most comprehensive framework includes activities by superior governments and the private sector. Thus, the local urban government finds that it must define its objectives and priorities in an *intergovernmental* context in which many essential urban services are provided by other authorities.

Such an intergovernmental context requires a commitment to an overall management system for urban centres that includes a variety of organizations with different authority and responsibility bases. Most local governments should focus on the following:

- (a) develop an awareness of their role in the system;

¹⁰Werner Hirsch, *et. al.*, *Local Government Program Budgeting: Theory and Practice*, New York, Praeger, 1974.

- (b) clarify objectives/priorities/activities in such a way to maximize outputs to urban citizens regardless of source of funds or management;
- (c) develop a cooperative attitude and working arrangements with non-local agencies; and
- (d) within its limited sphere of operations, to focus on improving efficiency/effectiveness by improved processes and techniques.

APPENDIX I

FUNCTIONS WHICH SHOULD BE DEVOLVED TO
LOCAL GOVERNMENTS

PART A

Items which are the responsibility of Local Governments save under exceptional or temporary circumstances:

Markets and Motor parks;
Sanitary inspection, refuse and nightsoil disposal;
Control of vermin;
Slaughter houses, slaughter slabs;
Public conveniences;
Burial grounds;
Registration of births, deaths and marriages;
Provision of community and local recreation centres;
Parks, gardens and public open spaces;
Grazing grounds, fuel plantations;
Licensing supervisions and regulation of bake houses, and laundaries;
Licensing, regulation and control of the sale of liquor;
Licensing and regulation of bicycles, hand carts and other types of vehicles except those mechanically propelled, and canoes;
Control or keeping of animals;
Control of hoardings, advertisements, use of loudspeakers in or near public places, drumming;
Naming of roads and streets and numbering of plots/buildings;
Control and collection of revenue from forestry outside the 'Forest Estate' of gazetted Forest Reserves;
Collection of vehicle parking charges;
Collection of property and other rates, community tax and other designated revenue sources.

APPENDIX II

FUNCTIONS WHICH SHOULD BE DEVOLVED TO LOCAL GOVERNMENTS

PART B

Items which should be regarded as Local Government responsibilities although State Governments and other organizations may also perform part or whole of these functions if Local Governments are not equipped to perform them initially:

- Health Centres, Maternity Centres, Dispensaries and Health Clinics, Ambulance Services, Leprosy Clinics and preventive health services;
- Abattoirs, meat inspections;
- Nursery and primary and adult education;
- Information and public enlightenment;
- Provision of scholarship and bursaries;
- Provision of public libraries and reading rooms;
- Agricultural extension, animal health extension services and veterinary clinics;
- Rural and Semi-Urban water supply;
- Fire Services;
- Provision of roads and streets (other than trunk roads) their lighting, drainage;
- Control of water and atmospheric pollution;
- Control of beggars, of prostitution and repatriation of destitutes;
- Provision of homes for destitutes, the infirm and orphans;
- Provision of public utilities except where restricted by other legislation, specifically including provision of road and inland water transport;
- Public housing programmes, Operation of commercial undertakings;
- Control of traffic and parking;
- Regulation and control of buildings, Town and Country Planning;
- Piped sewerage systems.

APPENDIX III

IMPROVING URBAN MANAGEMENT IN LOCAL
URBAN GOVERNMENT: SOME RELEVANT
QUESTIONS

1. What are the objectives of Local government? How are operational objectives defined and expressed?
2. How is the local government organized? Does the organization reflect the objectives of the local government? Can the organization be improved?
3. How are management decisions made? Is this process promoted or hindered by the organizational structure? How is the effectiveness of decisions evaluated? Can the process be improved?
4. How is the work of the local government planned, organized and allocated? Is there a management planning process?
5. What are the spatial implications of local government decisions and actions? Is there an urban planning process and agency? Is there an urban-rural integration strategy? Should there be a special agency for physical planning? If so, how should it be organized and where should it be located?
6. Does the local government engage in medium to long term development planning? If so, to what extent is it related to State/Federal development planning, to urban planning and the budget process?
7. What is the approach to budgeting and accounting? Is the budget line-item? Is accounting cash and financial oriented? How are these functions organized? Can they be improved?
8. What are the demands and potential demands for local government services? Can per capita costs be determined? How do they compare with other local governments in Nigeria and other countries?
9. What improvements can be made in personnel management and leadership to promote motivation and improved productivity?
10. What improvements can be made in technology to improve productivity and effectiveness. Is it too early to think about time-sharing of computer services? Other technology?
11. What is the financial position of the local authority? How can this be improved?
12. Does the local government have adequate manpower, sufficiently well-trained to perform its functions effectively both now and in the future? What should be done about manpower planning?
13. To what extent is local government interdependent with private,

State and Federal organizations? To what extent is the local government task environment complicated by intergovernmental involvement in its geographic area? Is there need for intergovernmental action planning and decision making?

14. Are there important problems in the community that cannot be confronted? Why? Lack of resources? Lack of authority or jurisdiction?
15. Are objectives being achieved? Are the requirements of localizing national objectives being met? Are these inequities in the distribution of services? What can be done about service shortfalls?



*Unified Set-up of Rural and Urban Local Bodies**

J.S. SAWHNEY

INDIA HAD 3,119 urban centres as per 1971 census. Of these, there were 38 corporations, 1,485 municipal committees and 389 town committees or notified area committees. The remaining more than one-third urban centres did not have any urban municipal body and formed part of Rural Panchayat system. Table 1 shows detailed break-up regarding the civic status of our urban centres.

In terms of population size the urban centres range from less than 5,000 to more than 70 lakh persons. For the sake of convenience, however, these are classified into six broad classes and the distribution of 3,119 urban centres alongwith proportion of urban population residing in six classes

TABLE 1 NUMBER OF CITIES AND TOWNS BY CIVIC STATUS, 1971

1. Corporations	38
2. Municipal/MC/MB	1,485
3. Town Committee/Notified Area Committee/Town Area Committee	389
4. Non-Municipal	209
5. Town Panchayat/Panchayat	653
6. Others ^a	54
	<hr/>
7. Cantonment Boards/without any civic status	2,828 291
	<hr/>
	3,119

^aStation Committee, Union Committee, Civil Township, Township, Executive Office, Sanitary Board, Special Area, Census Town.

*Views expressed in this paper are personal views of the author and not of the organization where he is working.

of cities/towns as classified by the Registrar General of India is given in Table 2.

TABLE 2 DISTRIBUTION OF URBAN CENTRES WITH POPULATION BY SIZE CLASS 1971

<i>Class</i>	<i>Number of Towns</i>	<i>Percentage of Total</i>	<i>Cumulative Percentage</i>	<i>Population in '000</i>	<i>Percentage of Total</i>	<i>Cumulative Percentage</i>
I 1 lakh and above	151	4.9	4.9	53,381	48.9	48.9
II 50,000 to 99,999	219	7.0	11.9	14,712	13.5	62.4
III 20,000 to 49,999	652	20.9	32.8	19,947	18.3	80.7
IV 10,000 to 19,999	987	31.6	64.4	13,961	12.8	93.5
V 5,000 to 9,999	820	26.3	90.7	6,197	5.7	99.2
VI Less than 5,000	290	8.3	100.0	896	0.8	100.0
Total	3119	100.0		109,094	100.0	

SOURCE: General Population Tables.

It will be seen that the distribution of urban population is skewed in favour of large size centres, in that 48.9 per cent of urban population lives in only Class I cities while Class V and VI towns together accommodate 6.5 per cent of the urban population. Over the last several decades there has been observed a persistent trend towards progressive concentration of population in larger cities. This points out that development of urban hierarchy in our country has not been balanced and population tended to decline in small and medium towns. One reason for this unhealthy trend has been the fact that these towns have not been promoted to play the rightfull part as central places in the process of socio-economic development of the countryside.

Not all settlements with more than 5,000 population are classified as urban. Table 3 reveals that more than 6,000 of these settlements still possess rural characteristics and are grouped with rural settlements. These 6,332 settlements are really in the process of passing through the official test of being categorized as urban.

Indeed all the settlements whether characterized as rural or urban form part of a single settlement hierarchy that emerges to facilitate the process of production and distribution of the various goods and services the society has the capacity to produce. With a progressive change in the composition and structure of the income of a nation there appears a corresponding change in the relationship and pattern of the various sizes of its settlements but their essential interdependence remains unimpaired throughout the process of evolution. It is nevertheless convenient and customary to classify all the settlements in urban and rural hierarchies.

TABLE 3 DISTRIBUTION OF RURAL SETTLEMENTS WITH POPULATION BY SIZE CLASS 1971

	<i>Number</i>	<i>Percentage of total</i>	<i>Cumulative Percentage</i>	<i>Population in '000 in each class</i>	<i>Percentage of total</i>	<i>Cumulative Percentage</i>
Below 200	150,072	26.1	26.1	15,246	3.5	3.5
200-499	168,561	29.3	55.4	56,628	12.9	16.4
500-999	132,990	23.0	78.4	94,412	22.5	37.9
1000-1999	81,973	14.2	92.6	113,160	25.8	63.7
2000-4999	36,005	6.3	98.4	104,547	23.8	87.5
5000-9999	4,974	0.9	99.8	32,717	7.4	94.9
10,000 and above	1,358	0.2	100.0	22,334	5.1	100.0
Total	575,933	100.00		439,044	100.00	

LOCAL SELF-GOVERNMENT

We have local self-government institutions in both the rural and urban areas but historically the two have grown and developed under vastly different circumstances. While the municipal governments in the urban areas have passed through a long period of evolution and development the introduction of Panchayati Raj institutions in the rural areas has relatively recent origin. This is one reason why notwithstanding the close interdependence between the two areas, the interaction between the two type of institutions is minimum. We shall first discuss the existing pattern of local self-government in both the areas and then examine the need for a unification.

EXISTING PATTERN OF PANCHAYATI RAJ AND URBAN LOCAL BODIES

The introduction of Panchayati Raj system in the rural development administration has been regarded as a revolution in the direction of transferring sovereignty from Government to the people. It was heralded as the establishment of a new pattern of social order taking democracy to the grassroots. The principal objective of the Panchayati Raj system is to secure people's active participation in the preparation and implementation of development plans so that the vast reserves of energy among the rural masses is harnessed for rapid economic transformation.

The three-tier structure of local bodies with a directly elected Village Panchayat at the village level, a Panchayat Samiti at block level indirectly elected by the Panchas of all the panchayats grouped together in con-

venient units and electing from amongst themselves members of Panchayat Samities. The Zila Parishad consisted of all the Presidents of Panchayat Samities, all the members of the state legislature and of Parliament representing part or whole of the district, the Collector and other district level officers nominated by the State Government. The scheme contemplated the panchayats and Panchayat Samities as executive bodies and the Zila Parishad as a coordinating and supervisory body. There are regional as well as state to state variations in this three-tier system as well as in the election patterns.

TALUK HEADQUARTERS AN ANACHRONISM

An anomalous situation is created in many states by continuation of Taluk level administrative set-up side by side with the Panchayati Raj system. In the context of Panchayati Raj system proposed here the existence of Taluk headquarters will be a mere anachronism which needs to be eliminated through a merger of the two levels into one single block level administrative institution.

FUNCTIONS OF PANCHAYAT RAJ INSTITUTIONS

Gram Panchayats are responsible for maintaining sanitation and conservancy within their jurisdiction. Their responsibilities include water supply, weeding out noxious vegetation, regulation and abatement of offensive trade, destruction of rats, stray dogs, etc. In the sphere of public health and medical services, the establishment and maintenance of maternity and child welfare centres, preventive measures against the spread of epidemics; propagation of family planning and registration of births and deaths are major functions of panchayats. Panchayat Samities and Zila Parishads have been given the function of planning and development and promoting cooperative activities. The community development programme, promotion of agriculture, distribution of better seeds and fertilizers, model agricultural farms and encouragement to cottage industries are shared between Panchayat Samities and Zila Parishads.

FUNCTIONS OF URBAN LOCAL BODIES

In all the states there are municipal acts under which municipal bodies are constituted. In some states such as Uttar Pradesh, Bihar, Madhya Pradesh, Orissa, Punjab, Himachal Pradesh and Jammu & Kashmir, there are also provisions for the creation of notified areas. The members of these notified area committees are generally nominated by the State Government. The Municipal Act confers upon the State Government the power to extend any of their provisions to the notified areas. There are

special acts in some states for creation of corporations for large towns. Cantonments are specialized type of urban local bodies which function under the control and supervision of the Union Defence Ministry in accordance with the provisions of the Cantonments Act, 1924.

The Urban Local Bodies which are the urban wing of district administration are also directed to promote the welfare of the community. In view of the changed concept of the state activity local governments in urban areas have not only to look after the social functions of street lighting, conservancy and sanitation, roads and the like but also to promote social and economic development of resident communities.

The local bodies are important units to help achieve the decentralization of political power and promotion of democratic values in urban areas. The functions of the urban local bodies can broadly be classified as obligatory and discretionary. Under obligatory functions come public health and sanitation, medical relief, water supply and drainage, primary education, town improvement and planning. The discretionary functions include certain aspects of public health and sanitation, construction of the houses for the poor, providing accommodation to the employees, maintenance of relief works, etc. In addition, education and social welfare, provision of public utilities, etc., also come within the discretionary functions of the local bodies.

DECENTRALIZATION OF LOCAL SELF-GOVERNMENT FUNCTIONS

The total functions of local self-government can broadly be classified into four groups:

- (a) Administrative Functions;
- (b) Development Functions;
- (c) Control and Regulatory Functions; and
- (d) Social Welfare Functions.

Administrative and Development Functions

The functional dichotomy of the rural-urban local self-government is most pronounced at the level of district and lower administrative units. The development functions of the district local-self body, the Zila Parishad, do not include urban and non-agricultural development in the district, while the general administration of the entire district is organized in a unified manner under the overall charge of the district collector. Similarly, urban local bodies confine their activities within municipal areas to the total exclusion of areas beyond urban limits. Further, in the discussion of democratic decentralization and devolution of authority and power to democratic local-self institutions, reference is mostly made to the economic

and development functions which the Government has assumed after the advent of planned economic development while mention is hardly ever made about devolution of the administrative powers to any other level except the already existing channels of administration. In fact, there is a need for devolution of both administrative and developmental functions to a single system of local self-government responsible to people through democratic institutions.

Control and Regulatory Function with Respect to Growth

In the emphasis on development of agricultural and non-agricultural activities in rural areas there is a neglect of control and regulatory functions that are essential part of local-self-government. It is possible that the need for regulation of growth may not be felt today but unplanned growth is liable to lead to problems of pollution, ecological hazards and land use conflicts which may become difficult to resolve at a later stage. Therefore, it is essential that the district and local authorities should pay attention to a systematic and planned growth rather than promoting all kinds of development without any reference to locational and environmental aspects.

Social Welfare Functions

The existing Panchayati Raj Institutions in the rural areas are, among other things, responsible for social welfare functions in the rural areas. It is, however, observed that the social welfare functions being carried out in the rural areas are part of the departmental activities of the various State Government departments and the Panchayati Raj Institutions as such have neither administrative set-up nor resources as well as a delivery system for social welfare functions in the rural areas. In evolving an institutional design for the delivery system their viable operation will have to be kept in mind. Village is considered too small an entity to make for efficient functioning for most of the services while Panchayat Samiti may be too large an area. Perhaps each service will have to be organized differently keeping, of course, in view a maximum travel distance for the users. Most service may however find place in settlements falling between the village and the Panchayat Samiti. The operational and administrative responsibility for the services may be assigned to the Panchayat Samiti while there may be more than one levels of hierarchy in the delivery system of a particular service within a Panchayat Samiti.

DEVOLUTION OF FUNCTIONS AND AUTHORITY

The ideal devolution of power and authority is that in which all the local-self bodies perform all the four functions mentioned above in the

areas falling within their jurisdiction and the higher bodies may assume only such powers as may not be capable of being performed at the lower level.

A noticeable feature of our democratic decentralization is that starting with a unitary system of government during the British colonial period we are moving towards progressive decentralization and devolution of authority to the lowest possible level. The progress towards this objective will essentially be constrained by the managerial capability, responsiveness and participation of the people. While substantial decentralization from unitary to federal form of government has been achieved through the Constitution, further decentralization to district and sub-district levels is yet in the process of crystalization. Through the introduction of Panchayati Raj system we have attempted to give substantial powers to Village Panchayats and Panchayat Samities but we do not seem to have succeeded in creating a strong link between the existing urban local bodies and the newly created rural local-self structure.

Consequently, in the existing pattern there is very little institutional interaction between urban local bodies and their rural counterparts. In some states mechanical device of representation of some members of one set of local bodies attending the meetings of the other set of local bodies has been employed but, as can be imagined, impact of such cross-representation is negligible for it does not provide the essential opportunity for integration of planning and development at a single level.

EXTENT OF INSTITUTIONALIZATION OF URBAN LOCAL BODIES WITH PANCHAYATI RAJ SYSTEM

In most of the States the Panchayati Raj enactments provide for representation of urban local bodies on the Panchayat Samities and Zila Parishads. The objective of such representation, however, remained obscure though it does establish a link between the urban and rural bodies. The pattern of representation of urban local bodies on the Panchayat Samiti and Zila Parishad varies in different states. In the states of Andhra Pradesh, Bihar and Gujarat the urban local bodies are represented on the Panchayat Samities by their Chairman and in Madhya Pradesh by a Councillor. In Orissa, the Chairman of the municipalities and Notified Area Committees with population not exceeding 20,000 are *ex officio* member of the Panchayat Samities while in U.P. only the Town Area Committees are represented. As regards, Zila Parishads, the municipal bodies in Assam, Gujarat, Tamil Nadu, Orissa and Uttar Pradesh are represented by their Chairmen. In Bihar, the members of all represented local bodies in a district elect three persons from amongst themselves to the Zila Parishad, while in West Bengal, the Government nominates the chairman of one of the municipalities in each district.

In Andhra Pradesh, the urban local bodies are not represented on the Zila Parishad. The Zila Parishad can, however, nominate one of the Chairmen of Urban Local Bodies in the district to be a member of its Standing Committee dealing with planning, community development and communications.

In one State, Maharashtra, experiment of creating a unified urban-rural local-self institutions has been made through creation of a 'District Planning and Development Council' consisting of members both from urban local bodies as well as rural local bodies and other interested institutions. The representation here is indirect and the emphasis on rural and urban distinctions continuous.

RURAL-URBAN RELATIONSHIP

Human life whether urban or rural is basically the same and any division is essentially more expedient than natural. Evaluation from rural to urban way of life is a continuous process and the spectrum comprises of a continuous sequence ranging from a tiny hamlet to a metropolis. No two settlements may be of the same size or may possess same characteristics. Barring the extremes at the two ends of the scale, there are numerous middle level settlements that possess attributes of both urban as well as rural areas. 'Urban' has been variously defined in terms of "distinctive mode of group life, as a function of population size and density of settlement, as a distinctive physical settlement pattern and land use, as a type of social and cultural organization and administrative set-up of providing certain community facilities and public utilities."¹ But these characteristics are not uniquely and universally possessed by all the urban areas. Indeed metropolises like Bombay and Calcutta have many areas which are more rural in out look and way of life than some of the rural parts.

The principal distinction between two areas is made, among other things, on the basis of occupational structure of the population. Areas where population is predominantly occupied in non-agricultural activities are termed as urban, while areas where population is mostly engaged in agricultural activities termed as rural. But this division again does not mean that non-agricultural activities in rural areas and agricultural activities in urban areas have no importance.

RURAL URBAN INTERDEPENDENCE

Economic activities whether agricultural or non-agricultural are linked up in a system which functions as an organic whole. Agricultural and

¹Government of India, Ministry of Health and Family Planning, *Report of the Rural-Urban Relationship Committee*, Vol. I, 1966, p. 36.

non-agricultural development cannot be treated in isolation from one another because they are inter-dependent and complementary to one another. Output of one sector is used as input in the other and *vice versa*. Similar to the complementarity (in agricultural and non-agricultural sectors) there exists a corresponding complementarity between rural and urban areas. Just as various sectors are inseparable parts of an economy in sectoral sense, rural and urban areas are inseparable parts of the same economy in the spatial sense. Rural activities complement and supplement urban activities and vice versa is also equally true. In brief, the rural-urban inter-dependence can be perceived in terms of interaction between the two areas in the various fields of activities such as input and output markets, manpower market, utilization of economical social services available in urban centres.

ROLE OF SETTLEMENTS AS CENTRAL PLACES

Without tracing back the genesis of either the central place theory or the theory of location of economic activities we may recall the contribution made by this line of argument in highlighting the role of certain human settlements as central places in their respective areas. The approach essentially consists of classifying settlements into levels of hierarchy based on their functional characteristics and their role as places of greater interaction with other settlements.

Thus at every level there may be a functionally inter-linked viable community, consisting of a central place and its dependent settlements, each community capable of serving at its own level as a planning unit in the hierarchy of multi-level planning. For the efficient functioning of the planning unit as an instrument of economic development and social change it is essential to organize the unit into a unified administrative entity. However, nothing substantial is possible of achievement without active and intimate participation of people in the development process of the community. The same, however, be achieved through providing democratic institutions representing popular will at the appropriate levels.

The popular local self institutions in our country could not make use of functionally inter-linked communities as bases for economic development simply because these are organized not in unified but in dichotomic manner.

EMERGENCE OF RURAL-URBN DICHOTOMY

The urban local bodies existed before the introduction of Panchayati Raj and the rural local-self set-up was conceived independent of the existing urban set-up. This led to a dichotomous division of local-self government into urban municipal administration and rural Panchayati Raj

system. The district development which had primarily an emphasis on rural development came to be regarded as rural and agricultural programme. Consequently the role of urban economies as vehicles of growth and development for their complementary rural economies could not be adequately recognized. Hence the non-agricultural aspects of economic development of the district came to be relegated to a secondary position.

PROBLEMS ARISING FROM DICHOTOMOUS SET-UP

In view of complementary character of rural and urban economies as noted in the previous sections their dichotomous treatment leads to un-coordinated growth in the two sectors and gains from one sector supplementing the efforts of the other are lost in the process. For example, if there is an increase in the agriculture-based industrial activity in urban areas without a corresponding increase in the agricultural produce in the supporting rural area, shortages of inputs are bound to emerge. Similarly, if there is a rapid increase in agricultural produce without corresponding augmentation of marketing, storage and transportation as also industrial consumption of the produce, serious disequilibrium in all these markets will occur. Therefore, economic development must be coordinated both in sectoral and spatial sense. The development of socio-economic infrastructure at the most appropriate location must go on even as economic development is taking place.

There is a substantial proportion of the population living in the towns and cities of the size especially of 5,000 to 20,000 engaged in agricultural activities. A large number of these cultivators belong to the category of small farmers and marginal farmers. They are not able to take advantages of the schemes like SFDA and MFAL projects for the simple reason that they belong to an urban area and are not allowed to take advantage of schemes meant for rural population. Similarly, there are non-agricultural and industrial activities in rural areas which remain deprived from the promotional schemes for these activities introduced in urban areas.

Then there is the problem of the wide disparity in social and community facilities provided to urban and rural people. Both the type of local bodies are responsible for maintaining sanitation and conservancy within their jurisdiction, *e.g.* water supply, public health and medical services and various other community facilities. Yet the standard of these services in the two areas is widely different. The resource base of rural local bodies is grossly inadequate as compared to urban local bodies and they are not in a position to provide these services according to the urban standards. While more integration at local-self level will not eliminate rural-urban disparity with respect to social services it will bring rural services closer to civic administration and in many cases there may be economies of scale and agglomeration in organizing a joint delivery system for both the areas.

Admittedly, there are great disparities in provision of civic services within the urban areas also.

The criterion of administrative jurisdiction delimiting the inhabited places as urban, distinct from surrounding rural areas, does not reflect the realities of the situation. The mere delimitation of municipal boundaries does not limit an urban process at their edge. Urban centres are continuously expanding and spreading beyond the statutory limits into what are administratively rural areas. Moreover, certain urban people intending to take advantage of non-application of municipal laws in surrounding areas which lie beyond the municipal limits, construct industrial, commercial or residential structures in order to avoid payment of the municipal taxes. Evidently, the rural local bodies especially panchayats do not have the necessary orientation nor the technical and administrative equipment to regulate such development activities within their own areas. Therefore, the need for a single regulatory and promotional statutory system is self-evident.

Above all, an Integrated Area Development approach is incapable of application unless the urban and rural areas are brought under single elected democratic institution. So long as these two areas remain under separate set of local bodies their coordinated development will continue to be elusive.

NEED FOR CHANGE

Evidently, the objective of Panchayati Raj, the overall development of the rural life, could not be achieved by merely concentrating on agricultural sector. Rather, inadequate promotion of non-agricultural activities in rural areas has only accentuated under-employment and low purchasing power of the rural masses.

Today, the solution to the problems of rural unemployment and under-employment is seen in the large scale introduction of non-agricultural activities in rural areas. Development of these activities will not only provide direct employment to the rural poor but will also give a fillip to the rural economy as a whole. In this important sense all sizes of settlements right from a hamlet of 10 households to a metropolis of 10 million population form part of a single system where all settlements are integrated in different degrees both spatially and functionally. The dependence of one area upon the other is so intense that a villager living in a remote corner of the country does make use, although not directly, of certain facilities offered by a metropolis.

It would be seen from the above that economic and social activities whether agricultural or non-agricultural, rural or urban are inherently inter-linked and inter-dependent and urban settlements are not only supporting urban population and activities but also population and activities

found in surrounding rural area. No planning can be comprehensive and complete unless it takes all the aspects and areas of the economy simultaneously into consideration. There is need for demarcation of functional economic communities based on Integrated Area Development and Growth Centre approach comprising both of rural and urban components. These must also be provided with a Panchayati Raj institution so that people get opportunity to decide their destiny through voluntary democratic participation.

The principal criterion of the reorganization should be the economic viability under the integrated area development approach, taking interdependence of rural and urban areas into account and eliminating rural-urban dichotomy altogether. The idea is to create a functional community structure consisting of one or more urban centres and clusters of villages with close functional ties so that the whole community becomes viable and integrated unit of planning and development.

PROPOSED FUNCTIONAL RESTRUCTURING

In considering a unified institutional arrangement which will remove the present dichotomy between the urban and rural administration, an important aspect that needs to be considered is the divided responsibility that exists today in the form of municipal functions and development functions. If these are to be dealt with separately then it is inevitable that there will be two lines of institutions coming from top to bottom. However, if it is conceived that these two could be combined into one administration responsible for both municipal functions as well as development functions, then the unified administrative set-up can be evolved. In the unified set-up, the municipal functions may have to be shifted to the block level which would have adequate fiscal power for taxation. In such a case, the question would arise as to what would be the functions of the village panchayats and any municipal bodies that may exist in the block which are also statutorily constituted. They will have to serve as sub-units of the block level administration and will carry out municipal functions by delegation. This would, in a way, cure the present ill of the village panchayats not being able to act as independent units of administration.

MODE OF INSTITUTIONALIZATION

In order to create unified rural-urban local-self institutions, two types of set-up are conceived, one with regard to metropolitan districts and the other with regard to non-metropolitan districts. The metropolitan districts will comprise of areas in which more than 60 per cent population (1971) is urban and will include at least one city of 5 lakhs or more together with surrounding rural areas directly influenced by the urban centre. The

following table summarises the distribution of districts according to their level of urbanization. These are based upon present boundaries which sometimes include a large rural area within a district (*e.g.*, Varanasi) or only a city with very little rural population (Chandigarh). For our purpose, an exercise will have to be done to redraw the boundaries for the metropolitan districts based on geographically contiguous areas directly dependent on the metropolitan city.

**TABLE 4 DISTRIBUTION OF DISTRICTS BY THE LEVEL OF
URBANIZATION, 1971**

<i>Level of Urbanization</i>	<i>Number of Districts</i>	<i>percentage</i>	<i>Cumulative percentage</i>
Below 10%	122	34.66	—
10-20	120	34.09	68.75
20-30	61	17.33	76.08
30-40	22	6.25	82.33
40-50	13	3.69	86.02
50-100	14	3.98	100.00
	352		

Statement showing cities with more than 5 lakh population and districts with more than 50 per cent urban population is presented in Appendix I.

The second set of institutions will pertain to non-metropolitan districts. This set may comprise of all the districts not regarded as metropolitan districts and have a smaller proportion of their population living in urban areas.

NON-METROPOLITAN DISTRICT

As has been suggested in the previous section, the integration in the non-metropolitan district may be achieved at the block level. There is need for greater degree of unification of urban and rural parts at this level through not mere representation of urban areas in Panchayat Samities but through reconstitution of Panchayat Samities in such a way as to make them responsible for both the areas. In other words, the functions of the Panchayat Samities need be expanded to include integrated development of agricultural and non-agricultural activities in the entire area. In order to achieve these objectives the block level Panchayat Samities may have to be geographically reorganized on the basis of functional interdependence of activities and viable operation of socio-economic functional units so that there are no conflicts arising from rural-urban interaction.

The locational decision regarding any function or economic activity within the Samiti area will be taken with a view to optimum utilization of the function activity and its maximum benefit to the entire territory of the Samiti.

These reorganized Samities may have representatives from all the areas in proportion to their population falling within their jurisdiction. Some of these Panchayat Samities will have a substantial proportion of their population living in urban areas. Obviously, these urban centres will mostly be those which are serving as Growth Centres in their respective areas with new and fast industrial activities taking place in their vicinity.

In areas where there are no large size urban centres, the rural population will be predominant in the reconstituted Panchayat Samities, though urban areas in these Panchayat Samities will be represented in proportion to their population. Here the focus of attention may not be industrial development but agricultural and allied activities may get greater emphasis.

After the Panchayati Samities are re-constituted taking representatives from all the constituent parts within their jurisdiction, their further representation in the Zila Parishad can be left to their combined membership without making any reference to a particular member's origin. In this manner mixing up of rural-urban interests can be achieved at Zila Parishad level. The district level local-self body, *i.e.*, Zila Parishad in the existing set up appears to be a very weak link in the whole Panchayati Raj System. Therefore, it is felt that the Zila Parishad may have to be substantially strengthened if the objectives of the future set-up are to be achieved. The process of devolution of power from the state government to lower level Panchayati Raj institutions must pass through the stage of devolution to Zila Parishad. Once this is done successfully, further devolution to Panchayat Samities and Village Panchayats will become easy and practicable.

To be an effective instrument of balanced development of the entire district, the Zila Parishad should concern itself with the urban as well as rural areas and all the sectors of the district economy whether agricultural or non-agricultural. For the preparation of a comprehensive plan for the entire district including sectoral and physical planning, the Zila Parishads may have a District Planning Board. In order to enable the Zila Parishads to perform these functions efficiently competent technical personnel may have to be associated with the District Planning Board. The district level departmental heads of the various functional departments of the State Government must also be associated with the formulation of the district plan. The District Plan may emerge from the proposals received from the Panchayat Samities from below. In order to enable Panchayat Samities to make well conceived proposals a planning institution similar to, but smaller than District Planning Board, may also have to be consti-

tuted at Panchayat Samiti level. These proposals will have to be married with the constraints imposed by the resource availability reflecting resources raised within the districts as also provided by higher level government. Also district plan must form an integral part of the state plan as a whole.

After the acceptance of the district plan, its implementation may be entrusted to the lower level local-self bodies such as Panchayat Samities, Municipal Committees and Village Panchayats.

METROPOLITAN DISTRICT

The metropolitan areas and the large city region complexes or urban conurbations (having a population of more than 5 lakhs) affect the life and the economy of the surrounding areas in several ways. In order that the peripheral areas develop in an orderly manner ensuring a smooth transition from the rural to the urban, it is necessary that there should be proper plans for these areas correlated and coordinated with those of the central city. The large metropolitan areas generally include a number of rural and urban local authorities. In the case of industrial belts, there may be a number of contiguous towns of more or less equal importance forming a dispersed conurbation of cities, towns villages interspersed with rural areas. An arrangement which would ensure the growth of the entire city region in a planned manner would necessarily require a suitable and dynamic administrative organization. The purpose may be achieved in the following way.

A special statutory authority of the kind of a metropolitan council may be created which will undertake the planning and development of the entire region in the matters which affect the entire area, namely, communications, water supply, drainage and sewage disposal and other such area-wide functions. In addition to metropolitan city there may be a few towns and a substantial number of villages in the metropolitan districts. These settlements will have their own Municipal Corporation/Committees and Village Panchayats. The planning of details and their execution can be left to the local authorities insofar as they pertain to matters of local interest only.

APPENDIX I

CITIES WITH MORE THAN 5 LAKH POPULATION
DISTRICTS WITH MORE THAN 50 PER CENT
URBAN POPULATION

<i>Sl. No.</i>	<i>Name of the City Distt.</i>	<i>City Popula- tion (1971)</i>	<i>Distt. Popu- lation</i>	<i>Urban Population (1971)</i>	<i>% of Urban Population to Distt. Population</i>
1.	Calcutta U.A.	7031382	3148746	3148746	100.00
2.	Gr. Bombay	5970575	5970575	5970575	100.00
3.	Delhi U.A.	3647023	4065698	3647023	89.70
4.	Madras U.A.	3169930	2469449	2469449	100.00
5.	Hyderabad U.A.	1796339	2791762	1839089	65.87
6.	Ahmedabad U.A.	1741522	2910307	1945814	66.85
7.	Bangalore U.A.	1653779	3365515	1865754	55.43
8.	Kanpur U.A.	1275242	2996232	1282331	42.79
9.	Poona U.A.	1135034	3178029	1329774	41.84
10.	Nagpur U.A.	930459	1942688	1055357	54.32
11.	Lucknow U.A.	819982	1617846	823470	50.89
12.	Coimbatore U.A.	736203	4373178	1556242	35.58
13.	Madurai U.A.	711501	3938197	1324194	33.62
14.	Jaipur U.A.	636768	2482385	745876	30.04
15.	Agra U.A.	634622	2308638	845236	36.61
16.	Varanasi U.A.	606721	2852459	716774	25.12
17.	Indore U.A.	560936	1025150	642899	62.71
18.	Jabalpore U.A.	534845	1686030	683554	40.54
19.	Allahabad U.A.	513036	2937278	542103	18.45
20.	Chandigarh U.A.	232940	257251	232940	90.54
21.	Yanam (Pondicherry)	8291	8291	8291	100.00
22.	Khasi Jaintes	18819	18819	18819	100.00
23.	Gwalior U.A.	406140	858001	443584	51.00

SOURCE: General Population Tables, Part II-A (i)

Municipal Tax Administration in Bihar

KAMALDEO NARAIN SINGH

AN EVER-INCREASING number of people in India is being drawn into towns and cities from their rural home as a result of industrial development, expansion of trade and commerce and the impact of modern science and technology. However, the urban local bodies are not able to cope with the mounting pressure of population.¹ Life in urban area presents a dismal picture. The water supply arrangements are over-strained; the sewers are almost choked; the streets are hardly able to cope with the traffic; open spaces are non-existent; 'epidemic has become endemic'. "Looking at cities, large and small, with an eye to civilized living and general human well being, one is struck with the fact that a very small minority of population of India's cities lives in comfort befitting a civilized community."²

Although urban problem is a part of economic development of the country, the work of urban development is primarily the responsibility of the urban local bodies. The urban local bodies, however, have not been very effective mainly due to weak financial structure. They are beset with acute and increasing financial difficulties. Gap between resources and the needs of the urban local bodies is too wide. In view of the ever widening gap between the desired and the existing level of municipal services in India, a discussion of the problems and prospects of municipal finance becomes meaningful. It is true that urban local bodies have not, by and large, shown much aptitude for efficient financial management and control. There are wastage and leakages. There is extensive under assessment of municipal taxes. Several sources of income have not been tapped and at least some services for which charges could be levied are extended free to a large number of citizens. Until internal resources increase proportionately, urban governments will fail to keep pace with growing requirements.

The present paper attempts: (i) to examine the pattern of municipal

¹*Report of the Rural-Urban Relationship Committee*, Government of India, Ministry of Health and Family Planning, Vol. I, p. 39.

²J.F. Bulsara, *Problems of Rapid Urbanisation in India*, 1964, p. 129, quoted in Abhijit Datta, *Urban Government, Finance and Development*, The World Press, Calcutta, 1970, p. 1.

taxation in Bihar; (ii) to find out the reasons why in spite of their poor finances municipal bodies in Bihar have failed to utilize the legitimate taxation opportunity; (iii) to find out the effective ways and means for municipal tax administration; (iv) to suggest for improvement and better utilisation of tax opportunities; and (v) to suggest the measures with a view to make the local taxation an effective instrument of resource mobilization.

The paper is concerned with a case study of the pattern of taxation of five biggest and the oldest municipal bodies in Bihar. The municipal bodies selected for the study are the Patna Municipal Corporation; the Bhagalpur Municipality, the Gaya Municipality, the Muzaffarpur Municipality and the Ranchi Municipality. The data were collected from the municipal bodies concerned in the month of September-October, 1978.

It has been estimated that during the last 15 years the average rate of growth of population in the five municipal bodies under study has been of the amount of 40 per cent. The growth of population in urban areas and increase in the tempo of urbanization are inevitable outcome of the economic development. Opportunities for new jobs have been created in the urban centres attracting more and more labour from rural areas. As a result of abolition of *zamindari* and other measures of land reforms in Bihar there have been changes in the rural economy, the investment in land in rural areas has lost much of its attraction and ex-zamindars and big agricultural farmers have found investment in housing and land in urban areas. Thus the change in the agrarian economy has resulted in the construction of high cost housing by high income groups who have migrated from the rural areas.³ Consequently, the resource potential of the municipal bodies has increased to a substantial extent. The increase in population and tempo of urbanization has led to over-crowding and large demand for housing space. As a result of this the rental value of old houses has also gone up which has meant an increase in the resource potential of the municipal bodies. Besides, there has been increasing demand for urban land; the annual values of empty plots of land which are fit for housing construction have gone up resulting in an increase in municipal tax potential

TRENDS IN RESOURCE MOBILIZATION

Table 1 indicates that the volume of resources of all the municipal bodies under study has increased. But the growth of resources of individual municipal body has shown different trends. The volume of total resources of Bhagalpur Municipality increased from Rs. 15.17 lakhs in 1965-66 to Rs. 18.72 lakhs in the year 1974-75. In the case of Gaya

³R.N. Tripathi, *Local Finance in a Developing Economy*, Cambridge Printing Press, Delhi, 1967, p. 126.

the increase was 100 per cent, i.e., it was practically doubled during these years. This was due to a very large expansion in volume of grants and contribution from the State Government. The growth of resources of municipal bodies as a whole shows that the total resources increased to the extent of 100 per cent but this increase in resources did not keep pace with the growth of municipal expenditure during the period of study. The factors which have significantly contributed to the growth of resource potentials of the municipal bodies are: (1) the growth of population; (2) the increase in the number of tax payers; (3) rise in prices and money income; (4) the implementation of development schemes resulting in the growth of taxes; (5) construction of new holdings; (6) increase in the coverage of tax on holdings; (7) the increase in the volume of grants by the State Government and (8) the increase in the volume of loans from the State Government.

TABLE 1 RECEIPTS OF THE MUNICIPAL BODIES

(Rs. in lakhs)

Year	Name of the Municipal Bodies				
	Bhagalpur	Gaya	Muzaffarpur	Patna	Ranchi
1965-66	15.17	10.08	8.05	23.97	7.73
1968-69	13.26	10.88	9.09	25.77	7.59
1970-71	15.65	13.78	10.16	84.67	14.65
1972-73	17.35	17.74	18.28	88.67	14.89
1974-75	18.72	20.36	21.44	58.99	17.14

SOURCE: Collected and compiled from Municipal Bodies concerned.

OWN RESOURCES AND EXTERNAL RESOURCES

The municipal revenue may be classified in two categories: (a) own resources and (b) external resources. The own resources are constituted by taxes and fees of various kinds and income from municipal property. The external resources constitute of grants and loans from the State Government. If the change in the pattern of resource mobilization be assessed from the point of view of the relative importance of these two categories of resources, it is found that on the whole the relative importance of the own resources has shown a decline and that of external resources an increase. In case of Bhagalpur Municipality the relative importance of its resources declined from 77.6 per cent in 1965-66 to 57.8 per cent in 1972-73. In case of Gaya Municipality the relative importance of its own resources declined from 73 per cent in 1965-66 to 29 per cent in 1972-73 and again increase up to 67 per cent. The own resources of the Patna Municipal Corporation declined from 62 per cent in 1965-66 to 30 per cent in 1970-71. Similar tendency can be marked in the case of Ranchi

TABLE 2 OWN RESOURCES AND EXTERNAL RESOURCES OF MUNICIPAL BODIES

(Rs. in lakhs)

Year	Name of the Municipal Bodies				
	Bhagalpur	Gaya	Muzaffarpur	Patna	Ranchi
<i>1965-66</i>					
Own Resources	11.78 (77.6)	7.22 (73.9)	5.21 (65.1)	14.95 (62.3)	4.25 (62.3)
External Resources	3.39 (22.4)	2.78 (27.0)	2.78 (34.9)	9.02 (37.7)	3.48 (37.7)
<i>1968-69</i>					
Own Resources	6.99 (52.1)	7.22 (66.3)	4.40 (48.5)	17.71 (68.7)	4.95 (68.7)
External Resources	6.34 (47.9)	3.66 (33.7)	4.68 (51.5)	8.05 (31.3)	3.64 (31.3)
<i>1970-71</i>					
Own Resources	8.97 (55.5)	7.69 (55.1)	6.12 (60.0)	25.24 (29.8)	5.05 (29.8)
External Resources	6.68 (44.5)	6.09 (44.9)	4.4 (40.0)	59.42 (70.2)	9.60 (70.2)
<i>1972-73</i>					
Own Resources	10.04 (57.8)	4.58 (28.9)	7.97 (43.7)	36.65 (41.4)	6.38 (41.4)
External Resources	7.31 (42.2)	13.26 (74.1)	10.30 (56.3)	51.93 (58.6)	8.50 (58.6)
<i>1974-75</i>					
Own Resources	11.06 (59.1)	14.06 (67.2)	8.11 (37.9)	37.59 (63.7)	9.02 (63.7)
External Resources	7.66 (40.9)	6.30 (32.8)	13.33 (62.1)	21.40 (36.3)	8.12 (36.3)

Figures in brackets indicate the proportion to the total Resources

SOURCE: Collected and compiled from Municipal Bodies concerned.

and Muzaffarpur Municipalities. There has not been only a general declining tendency in the relative importance of the own resources but also the fact that from year to year there have been wide variations in the relative importance of the two categories of resources illustrating the uncertain character of municipal finance in Bihar. The wide variations in the relative importance of these two categories of sources of municipal finance from

TABLE 3 TAX REVENUE OF MUNICIPAL BODIES IN BIHAR

(Rs. in Lakhs)

Year	Names of the Municipal Bodies				
	Bhagalpur	Gaya	Muzaffarpur	Patna	Ranchi
1965-66	5.46 (35.3)	5.28 (52.7)	3.68 (46.0)	13.13 (54.8)	2.97 (38.4)
1968-69	5.12 (38.6)	5.38 (49.3)	3.26 (35.9)	15.69 (60.8)	2.77 (36.4)
1970-71	6.38 (43.3)	5.76 (42.3)	4.53 (45.6)	21.76 (25.3)	3.67 (25.0)
1972-73	8.12 (46.8)	2.54 (14.5)	5.73 (33.3)	32.13 (36.2)	4.29 (29.6)
1974-75	9.09 (48.6)	11.33 (53.7)	6.40 (29.8)	32.63 (55.3)	6.37 (37.2)

Figures in brackets indicate their proportion to total receipts

SOURCE: Collected and compiled from Municipal Bodies concerned.

year to year were largely due to the fluctuations in the volume of grants from the State Government and accumulation of municipal tax arrears. The relative importance of the external and own resources is significant in the sense that it affects the autonomy of the municipalities. If the municipalities depend more and more on external resources the State control over municipalities will naturally increase and the municipal autonomy will be affected.

TAX REVENUE

The own resources of the municipal bodies in Bihar can be divided into two categories: (1) tax revenue and (2) non-tax revenue. An analysis of Tabls 3 indicates that the tax revenue of the municipal bodies in Bihar has increased, although its proportion to total municipal receipts has been fluctuating. The tax revenue of Bhagalpur Municipality constituted 35 per cent of the total revenue in the year 1965-66 but it increased upto 38 per cent in 1968-69, 43 per cent in 1970-71 and 48 per cent in 1974-75. In case of Gaya Municipality the relative importance of tax revenue has tended to decline from 52 per cent in 1965-66, it declined to 14.5 per cent in 1972-73 but again increased to 53.7 per cent in 1974-75. This fluctuation in the relative importance of the tax revenue can be explained in terms of grants received by the municipal bodies from the State Government for specific purposes. The tax revenue of Muzaffarpur Municipality was Rs. 3.68 lakhs in 1965-66, Rs. 4.53 lakhs in 1970-71 but in increased upto Rs. 5.73 lakss in 1972-73 and Rs. 6.4 lakhs in 1974-75. However, the relative

importance of the tax revenue in this also has a tendency to decline. The tax revenue of the Patna Municipal Corporation has increased tremendously. In 1965-66 it stood at Rs. 13.13 lakhs but in 1970-71 it increased upto Rs. 58 lakhs though its relative importance in the total revenue did not increase. This indicates the fact that the non-tax revenue of the municipal bodies increased simultaneously with the tax revenue. The tax revenue of Ranchi Municipality, like other municipalities in Bihar, has increased but its relative importance has been constant.

A number of factors have contributed to the growth in tax resources. In the first place there has been a rise in prices and the municipal bodies have revised the annual value of holdings on the basis of which the municipal taxes are imposed. The second factor which has contributed to the growth of tax resources is the increase in the total number of holdings.

TAX STRUCTURE

The municipal tax structure in Bihar has been constituted by the following taxes:

1. Tax on the annual value of holdings.
2. Water Tax.
3. Latrine Tax.
4. Tax on vehicles, horse and other animals.
5. Tax on trade, profession, callings and employment.

The tax effort of the municipal bodies can be assessed in terms of the following criteria:⁴

1. The extent to which the rate of the municipal taxes were raised during the period of study for the mobilization of additional resources.
2. A reassessment of the annual value of holdings on the basis of which the municipal property taxes are imposed.
3. An improvement in collection of taxes and reduction of arrears of tax revenue in relation to total effective demand.
4. An extension of the coverage of the municipal taxes; and
5. Reduction of element of tax evasion and tax avoidance.

The municipal bodies in Bihar have evolved a tax structure which is dominated by the importance of the property tax. As these taxes are imposed at a flat rate there is no graduation in their rates. The total effect of these taxes tends to be a regressive tax structure. The municipal

⁴R.N. Tripathi, *op. cit.*, p. 146.

bodies in Bihar do not impose any commodity tax like octroi and terminal tax. They have, very recently, adopted the tax on profession, trades and callings to raise more resources. The tax on vehicles, bicycles, horses and other animals is also imposed at a flat rate and as a result this kind of tax is also regressive.

TAX ON HOLDINGS

The tax on annual value of property has constituted the 'sheet anchor' of the municipal tax structure in Bihar. The tax on holding is imposed at a flat rate of 12.5 per cent on the annual value of holdings. The Bihar and Orissa Municipal Act of 1922 lays down that a new assessment shall be ordinarily made once in every five years. However, assessment of annual value is done at long intervals and the municipal bodies in Bihar have shown reluctance in undertaking assessment operation.⁵ The tax on holdings is highly regressive because it does not take into account the taxable capacity of the different groups of property holders and different income groups. The Municipal Act of 1922 provides that if the aggregate annual value of all holdings held by only one owner within a municipality does not exceed twentyfive rupees, the tax on holdings shall not be imposed on any of the holdings of the said owner.

Table 4 demonstrates that the yield from the tax on holdings has increased during the period of study although its relative importance in the total tax structure has declined. The yield from the tax on holdings in case of Bhagalpur Municipality increased from Rs. 2.58 lakhs in 1965-66 to Rs. 3.74 lakhs in 1974-75 but its proportion to the total tax receipts decreased from 47 per cent to 41 per cent. In case of Gaya the receipts from the tax on holding was Rs. 2.26 lakhs in 1965-66, it was almost doubled in 1974-75 but its relative proportion in total tax structure was constant. In case of Muzaffarpur the increase in this tax was low. In case of Patna the receipts from this tax increased more than 100 per cent but its relative importance remained unchanged. The tax on holdings of Ranchi Municipality increased but its relative importance declined. On the whole, the contribution of this tax in the total tax structure was never less than 40 per cent but this tax has tended to lose its importance as source of municipal revenue.

The tax on holdings has not operated as an effective instrument of resource mobilization because it lacks progressiveness and 'built in flexibility'. If this tax is to be converted into an effective instrument of municipal finance it is necessary that this tax should be made progressive. The Local Finance Enquiry Committee was "generally in favour of a progressive scale adaptable at the discretion of the municipality concerned".⁶

⁵Inspector of Local Bodies, *Inspection Notes*, 1967-68, p. 18.

TABLE 4 CONTRIBUTION OF TAX ON HOLDINGS TO THE
TOTAL TAX RECEIPTS

(Rs. in lakhs)

<i>Municipal Bodies</i>	<i>1965-66</i>	<i>1968-69</i>	<i>1970-71</i>	<i>1974-75</i>
Bhagalpur	2.58 (47.3)	2.71 (42.4)	3.31 (40.7)	3.74 (41.1)
Gaya	2.26 (43.0)	2.38 (42.4)	2.95 (37.5)	4.68 (42.1)
Muzaffarpur	1.82 (49.7)	1.82 (40.1)	2.31 (40.4)	2.50 (39.2)
Patna	5.48 (41.8)	9.18 (42.1)	13.55 (42.2)	13.42 (41.1)
Ranchi	1.80 (60.6)	2.43 (66.2)	1.89 (43.1)	2.69 (42.2)

Figures in brackets indicate their proportion to the total tax receipts

SOURCE: Collected and compiled from Municipal Bodies concerned.

In some of the municipal bodies in India progression in the tax structure has been introduced. In Calcutta, the rate of the tax varied from 15 to 29 per cent of the annual value with intermediate gradation. The Taxation Enquiry Commission of 1953-54 examined the question of introducing progression into the municipal property taxation and it found its scope severely limited in practice. The Commission held the view. "it is not feasible to operate a system of levy of property tax which takes into account the total ability to pay, *i.e.*, the total income from all sources; that is the function of income tax. The burden of progression will, therefore, be especially on those whose main form of profession and source of income is immovable property as distinguished from other types of profession or investment; and among these will be found not only the bigger investors and property-holders but the medium investors and medium owner occupiers of residential houses."⁷ But in spite of these reasons it did not rule progression as a feature of property taxation by municipal corporation and bigger municipalities. The present study is concerned with the finances of some of those municipal bodies which are the biggest in Bihar and there is no reason why these bodies should not introduce a progressive rate structure in their property tax system.

⁶Report of the Local Finance Enquiry Committee, 1951, p. 158.

⁷Report of the Taxation Enquiry Commission, 1953-54 Vol. III, p. 380.

WATER TAX

The water tax in Bihar is a service tax, the proceeds of which are meant for financing expenditure on water works. The Bihar and Orissa Municipal Act, 1922 provides "in fixing the rate at which the tax is to be imposed regard shall be had to the principle that the net proceeds of the tax together with the estimated income from payment for water supplied from the works under special contract or otherwise shall not exceed the amount required for making, extending or maintaining the water supply system together with an amount sufficient to meet the proportionate share of the cost of supervision and collection as fixed under section 69 and the repayment of, and payment of interest or any loan incurred in connection with any such supply or system." The provision indicates a number of specific features of this tax. Firstly, it has some resemblance to the general property tax because it is imposed on the basis of annual value of holdings. It has a flat rate of taxation and its assessment and collection are made along with the general property tax. But it differs from the general property tax in some respects.⁸ Firstly, the general property tax is meant to finance the general expenditure of the municipal bodies whereas the water tax is meant for financing specific expenditure on water works. This is based upon the distinction between the general functions and specific functions of the municipal bodies. Secondly, this tax has some element of price also because according to the municipal act the basis of the determination of the rate is such that it also takes into account the cost of providing water supply as well as the expenditure on maintenance, improvement and development of water works. Thirdly, it envisages a price policy for a municipal service based on the principle of no profit no loss.

It is worthwhile to examine whether the total receipts of the water tax of each of the municipal bodies have been adequate to meet the expenditure on the water works. The Inspection Notes of the Inspector of Local Bodies, Bihar, puts it, "It is found that the total receipts from water tax of municipal bodies have not been adequate to meet the expenditure on the water works."⁹ This appears to be a very unsatisfactory position from the point of view of the role the water tax has been assigned in the municipal finances. This has led the municipal bodies to divert resources from other directions to meet the deficits in water budgets and to take resort to the government grants and loans for the expansion and development of water works.¹⁰

The amount of water tax of the different municipalities in Bihar has increased but its relative importance in the total tax structure has been more or less constant (Table 5). In case of Bhagalpur Municipality, the

⁸R.N. Tripathi, *op. cit.*, p. 153.

⁹Inspector of Local Bodies, Bihar, *Inspection Notes*, 1970-71, p. 18

¹⁰*Ibid.*, p. 21

TABLE 5 CONTRIBUTION OF WATER TAX TO TOTAL RECEIPTS

	<i>(Rs. in lakhs)</i>			
<i>Municipal Bodies</i>	<i>1965-66</i>	<i>1968-69</i>	<i>1970-71</i>	<i>1974-75</i>
Bhagalpur	1.37 (25.1)	2.08 (32.6)	2.68 (32.9)	2.76 (30.3)
Gaya	1.90 (35.9)	2.04 (35.4)	.79 (31.2)	3.63 (32)
Muzaffarpur	.92 (25.2)	1.70 (37.7)	2.04 (35.7)	2.31 (36.0)
Patna	3.18 (24.2)	5.58 (30.5)	8.05 (25.1)	8.01 (24.1)
Ranchi	N.A.	N.A.	1.26 (28.8)	1.98 (31.1)

Figures in brackets indicate their proportion to the total receipts

SOURCE: Collected and compiled from Municipal Bodies concerned.

amount collected from water tax increased from Rs. 1.37 lakhs in 1965-66 to Rs. 2.76 lakhs in 1974-75 but its proportion in the total tax structure increased only by five per cent. In case of Patna, the amount of water tax increased from Rs. 3.18 lakhs in 1965-66 to Rs. 8.01 lakhs, more than doubled, but there was no increase in its relative importance in total tax structure. The proportion of this tax in the total tax structure remains constant due to the fact that the assessment of this tax is held along with that of the tax on holding. The question arises whether the rate structure of this tax can be made progressive and whether there is any scope for raising the rate of water tax. The progressive tax structure for water tax would be neither desirable nor feasible because it is a service tax. So far as the rate of this tax is concerned, most of the municipal bodies are imposing this tax at the maximum rate permissible under the law and, therefore, there does not appear to be any scope for raising the rate of this tax. Moreover, keeping in view the consumers of low income group the rate should be lower than the marginal cost of production from the point of view of social justice.

LATRINE TAX

Like water tax this is also a service tax. It is partly a property tax because it is based on the annual value of holdings and it is assessed and collected with the general property tax. The maximum rate of this tax is 7.5 per cent of the annual value of the holding. This tax also contains an element of price. Table 6 shows that the volume of this tax, like water tax, has increased but the proportion of this tax in the total tax revenue

TABLE 6 CONTRIBUTION OF LATRINE TAX TO TOTAL TAX RECEIPTS

(Rs. in lakhs)

Municipal Bodies	1965-66	1968-69	1970-71	1974-75
Bhagalpur	1.47 (27.09)	1.55 (24.2)	1.92 (23.65)	2.08 (23.2)
Gaya	1.10 (20.9)	1.25 (21.8)	.44 (17.6)	2.15 (19.4)
Muzaffarpur	.90 (24.4)	.92 (28.3)	1.18 (20.7)	1.25 (19.9)
Patna	4.22 (32.2)	6.35 (30.5)	9.26 (28.8)	9.10 (27.9)
Ranchi	.18 (6.24)	1.08 (29.6)	1.05 (23.9)	1.48 (23.3)

(Figures in brackets indicate their proportion to total tax receipts)

SOURCE: Collected and compiled from Municipal Bodies concerned.

varies from 19 to 27 per cent. The imposition of a flat rate of tax introduces a large element of regressiveness in this tax as a result of which the rate structure of this tax does not confirm the principle of social justice and fiscal policy.

TAX ON PROFESSION, TRADES, CALLINGS AND EMPLOYMENT

The municipalities in Bihar were empowered by the State Legislature to levy the tax on profession, trades, callings and employment in 1954. But these taxes have been imposed by the municipalities very recently. The total receipts of this tax have been negligible.¹¹ Trade tax is levied as a license fee for certain kinds of trades. There are a number of problems due to which this tax has not been proved to be an important and effective source of municipal finance. There is a substantial amount of avoidance of the tax due to the inefficiency of the municipal machinery of tax administration as well as lack of tax morality and existence of a considerable amount of tax payer's resistance and opposition. The present system of taxation on profession, trades, callings and employment is designed in such a manner that it provides a great scope for evasion because in some cases the tax is imposed on the persons, in some cases on rental value and in others it is realised as a licence fee for certain kinds of business and trades. There is a good scope for evasion and avoidance in case of persons doing more than one profession.

¹¹Inspector of Local Bodies, Bihar, *Inspection Notes*, 1974, p. 37.

TAX ON VEHICLES, HORSES AND OTHER ANIMALS

This tax has not been able to mobilise a significant amount of resources for municipal bodies in Bihar and has shown a declining tendency in the total tax structure. In many cases there has been leakages of revenue due to evasion.

EFFECTIVE DEMAND, COLLECTION AND ARREARS

The accumulation of arrears in huge amounts acts as an extra leakages in the municipal revenue. The municipalities in Bihar have woefully neglected the work of collection of the taxes. Arrears continue to accumulate till they become irrecoverable and then, written off. The percentage of collection of municipal taxes is miserably poor. The average collection of taxes does not usually exceed 60 per cent. In some cases the municipalities have failed to collect even 40 per cent of their taxes. It is surprising to note that the arrears, instead of showing any decline, have been mounting up in most of the municipalities (see Table 7). Another surprising feature of the municipal arrears is that a number of committee members and Government officials and departments are among the defaulters.¹²

THE MACHINERY FOR TAX COLLECTION

The Chief Executive Officer in municipal corporation and the Chairman or the Special Officer in the municipalities, is in overall charge of tax collection. The collection section consists of *bill moharirs* and tax collectors headed by a revenue assistant. There is also a Revenue Officer who is the officer incharge of all sorts of revenues and under whom supervision of collection staff is to work. The tax collectors are to contact the rate payers for collecting taxes. There is a special tax collection section for collecting taxes from departmental holding owned by the educational institutions and the governments. Besides, the rate payers can also deposit the tax in the municipal office.

If a rate payer fails to make payment on personal contact, certain steps have to be taken. The procedure is to issue a bill,¹³ a demand notice,¹⁴ and a distress warrant.¹⁵ The demand notice is issued if the rate payers fail to make payment of the municipal tax within 15 days from the date of the presentation of the bill with a fee at the rate of 6 paise per rupee. In case of failure of payment even on the issue of demand notice within 21 days a distress warrant is issued with an extra fee at the rate

¹²Inspector of Local Bodies, Bihar, *op. cit.* p. 48.

¹³ The Bihar and Orissa Municipal Act, 1922, Section 204.

¹⁴*Ibid.*, Section 205.

¹⁵*Ibid.*, Section 206.

TABLE 7 EFFECTIVE DEMAND, COLLECTION AND BALANCE OF ARREAR

(Rs. in lakhs)					
Municipal Bodies	Bhagalpur	Gaya	Muzaffarpur	Patna	Ranchi
<i>Years</i>					
<i>1965-66</i>					
Effective Demand	8.69	7.77	4.46	19.08	5.49
Collection	5.29	4.98	3.32	10.83	2.81
Arrear Balance	3.40	2.78	1.13	8.24	2.68
	(39.1)	(35.8)	(25.5)	(43.2)	(48.8)
<i>1968-69</i>					
Effective Demand	9.61	8.27	4.65	26.68	6.22
Collection	5.37	5.09	3.12	13.57	2.55
Arrear Balance	4.24	3.18	.93	13.40	3.66
	(44.0)	(38.4)	(20.1)	(49.2)	(58.9)
<i>1970-71</i>					
Effective Demand	11.92	9.67	5.89	29.90	8.36
Collection	6.13	5.28	4.37	15.56	3.67
Arrear Balance	5.70	4.39	1.52	14.34	4.69
	(48.5)	(45.4)	(25.9)	(47.9)	(56.10)
<i>1972-73</i>					
Effective Demand	17.11	19.15	8.07	39.29	21.90
Collection	8.45	4.71	5.62	19.30	6.18
Arrear Balance	8.66	15.24	2.45	19.89	15.72
	(50.6)	(76.3)	(30.2)	(50.7)	(71.7)
<i>1974-75</i>					
Effective Demand	16.44	26.07	8.47	66.88	24.90
Collection	7.74	4.24	5.82	38.83	6.22
Arrear Balance	8.72	18.83	2.65	38.85	18.68
	(52.9)	(72.2)	(30.1)	(47.5)	(75.00)

Figures in brackets indicate their proportion to total demand

SOURCE: Collected and compiled from Municipal Bodies concerned.

of 12 paise per rupee. In practice, the municipal bodies seldom adopt the above mentioned coercive methods for collection of taxes. The Inspection Notes of the Examiner of Local Accounts, Bihar puts it, "A large volume of municipal taxes has become time barred because legal action was not been taken in time for the issue of certificates and distress warrants and this lack of promptness in taking legal measures in time to

realize the municipal taxes has been accounted for not only due to lethargy and inefficiency of municipal administration but also due to lack of co-ordination between the tax department and the law department bodies.¹⁶

The accumulation of arrears in huge amounts tends to bring into ridicule the entire system of municipal government including taxation. It is easy to determine the causes for the failure to collect taxes. But it is not an easy task to plug the loopholes in the machinery and style of tax collection. The accumulation of arrears may be attributed to the following factors: (i) elected Chairman in overall charge of tax collection, (ii) lack of proper and adequate collecting and supervisory staff; (iii) unwillingness of the collecting staff to take prompt and timely measures for the recovery of taxes; (iv) failure on the part of the municipal bodies to take coercive measures; (v) delay on the part of collectors to invoke the provisions of the Act against defaulters; (vi) delay on the part of State Departments to clear arrears outstanding against them; (vii) delay in the preparation and completion of assessment lists and disposal of objections; and (viii) non-cooperation of the tax payers.

ASSESSMENT OF MUNICIPAL TAXES

One of the main problems in making the municipal property tax an effective instrument of municipal finance is to build an effective machinery for assessment and re-assessment of annual value of property and the development of an objective criterion for determining the reasonable rental value of holdings. The Bihar and Orissa Municipal Act, 1922 does not provide for executive officers or secretaries. The Municipal Commissioners are required to do assessment of the rental value of property.¹⁷ The Commissioners are competent to appoint such officers and servants as are deemed necessary subject to any rules made by the Government under the Act. The Commissioners shall, after making such enquiries as may be necessary, determine the annual value of all holdings and enter such value in the valuation list.¹⁸ The annual value of a holding is deemed to be the gross rental at which the holding may reasonably be expected to be let. The Commissioners are empowered to alter or amend the assessment list. The assessment list has to be published and any person who is dissatisfied with the amount assessed upon him or with the valuation of assessment of any holding may apply to the Commissioners to review the amount of assessment.¹⁹ All applications against assessment are to be heard and determined by a committee consisting of two Commissioners and two tax-payers of the municipality, nominated or elected by the Commissioners

¹⁶ Examiner of Local Accounts, Bihar, *Inspection Notes*, 1971, p. 32.

¹⁷ The Bihar and Orissa Municipal Act, 1922, Section 37.

¹⁸ *Ibid.*, Section 101.

¹⁹ *Ibid.*, Section 115.

in the prescribed manner and one Government servant not below the rank of Deputy Magistrate, nominated by the District Magistrate.²⁰ The decisions of the committee are final. Whenever it appears to the State Government that the assessment made in any municipality is inequitable the Government may require the Commissioners to revise and amend such assessment. If the Commissioners fail to comply with such orders or in the opinion of the Government, the revised and amended assessment is insufficient or inequitable, the Government may require the Commissioners to appoint an Assessor of the municipal taxes.²¹ The assessment made by an Assessor so appointed shall rescind and take the place of assessment which was held to be insufficient or inequitable. Once the assessment list is finalized after disposing of application for review in the manner prescribed above, no other appeal lies to any authority in respect of the assessment or valuation.

The machinery for assessment of the rental value does not appear to be satisfactory. This body cannot be fully independent in undertaking the valuation operations. The Municipal Commissioners and the Chairman do not want to displease the powerful and influential class of property holders for fear of losing their votes. This is the reason behind the under-assessment in the valuation of holdings. The Local Finance Enquiry Committee had recommended the creation of an independent valuation department for all local bodies by the State Government and the Taxation Enquiry Commission, 1953-54 endorsed the suggestion. The Examiner of Local Accounts, Bihar have been advocating the appointment of an independent machinery of valuation of annual value. In spite of these recommendations no such valuation department has yet been established.

It is evident from the above analysis that non-utilization, under utilization and accumulation of huge amounts of arrears are the main causes for the weak municipal tax structure in Bihar. None of the municipalities here can claim to have levied all the taxes, This confirms the opinion that "Indian local government is not short of opportunities for raising autonomous revenue. What appears to be wrong is a general lack of responsibility, unwillingness to raise tax rates, graft and inefficiency in collection."²² Full utilisation of available tax sources will give the municipalities some relief from their present poor financial position. Moreover, the municipal bodies cannot make out a case for the allocation of new sources of taxation unless they utilize their existing resources fully.

PROBLEMS AND REMEDIES

The problem of resource mobilization at the municipal level is not only

²⁰The Bihar and Orissa Municipal Act, 1922, Section 117.

²¹*Ibid.*, Section 121.

²²U.K. Hicks, *Development from Below*, Oxford, Clarendon Press, 1961, p. 155.

an administrative problem but also a political and psychological one. Effort should be made to ensure the prompt and full collection of taxes. For an independent, impartial and effective assessment of municipal taxes the establishment of a valuation department at the State level having the status of a tribunal is suggested. The machinery of tax collection should be improved by recruiting trained and competent persons. However, unless the salary and conditions of municipal services are made more attractive, it is difficult to attract the right type of persons for the job. Ways and means should be devised for transfer of tax collecting staff on rotation basis so that no one is confined to any particular area or job for a long period.²³

For the growth of public expenditure at the municipal level it is essential that there should be planned mobilization of resources by the municipal bodies. The problem of resource mobilization at the municipal level is a difficult one and this would involve a fundamental change in the entire approach of the municipal bodies. In most cases the municipal bodies are not able to realize the taxes because of positive opposition from the tax payers. The tax payers have developed a feeling that municipal tax administration is not impartial in its operation. The municipalities are not making the best use of resources and they are not discharging their function effectively and properly. If this psychological problem is to be resolved the municipalities must improve their operation and create an impression that they are functioning independently in the best interests of the citizens and their expenditure policy is being efficiently and effectively carried out. Moreover, any amount of improvement in the efficiency of the municipal tax administration will not be able to solve the problem unless and until full public cooperation is forthcoming to the payment of taxes. For this a fundamental change in the outlook of the tax payers is of vital importance.

The property tax is the most important fiscal instrument for resource mobilization by the municipal bodies in Bihar. The rate of this tax is one of the highest in India and, therefore, there appears to be no scope for raising the rate of this tax but the rate structure of this tax may be modified by introducing an element of progressiveness. The reassessment of the annual value of property should be undertaken every five years and it must be made to synchronize with every five year plan so that the reassessment are made effective in the first year of the plan.

An important role has to be assigned to the service taxes such as water tax and latrine tax for the mobilization of resources. Under the existing law these taxes contain an element of price determined on the average cost of production so that the water and latrine budget of the municipalities

²³Pratap Singh, "Bridging the Gap Between Municipal Obligation and Resources", *The Indian Journal of Political Science*, Vol. XXXV, April-June, 1974, p. 169.

may be self sufficient and self financing. But in actual practice these budgets in many cases are in deficits and these deficits are covered by diversion of resources from other directions. The municipal bodies should follow a policy so that the revenue from these sources is adequate not only for meeting the current expenditure but also for expansion and development of these services.

BETTERMENT LEVY

The municipal body should impose betterment levy. This levy has the objective of taxing the unearned increment in the value of property arising as a result of the implementation of a scheme of improvement and development and such an unearned increment in the value of property is regarded as true windfall. The betterment levy may provide additional resources for development which may help in the financing of the programmes of development.

DELIMITATION OF MUNICIPAL TAX

It is common knowledge that municipalities do not have sufficient lucrative tax sources. Whatever taxes have been delegated to them are also not safe from parallel levies by the State Governments. The State Governments are in search of additional funds and they do not care much for financial needs of the municipalities. The Government of Bihar has often levied Professional Tax on the pretext that the municipal bodies have failed to utilize this tax adequately. It is true that municipal bodies have failed in many cases to utilize their own legitimate source of revenue but the remedy does not lie in appropriating to the State Government an area of taxation that legitimately belongs to municipal bodies. The tendency of the State Governments to encroach upon the municipal tax field under one pretext or the other, if unchecked, is likely to retard the growth of a proper system of local taxation, and may ultimately jeopardise the very existence and basis of self-governing municipal institutions. The Taxation Enquiry Commission observed: "We, therefore, agree that it is both desirable and necessary that certain taxes should in effect be reserved for being utilized solely by or for local bodies."²⁴ The Zakaria Committee (1963) and the Rural-Urban Relationship Committee (1976) endorsed the recommendations of the Taxation Enquiry Commission regarding reservation of local taxes. However, they did not favour amendment of the constitution for the reservation of specified funds of local taxation. They wanted the states to evolve a convention under which the State Government would keep away from the local tax field. But a convention to respect the local tax

²⁴*Report of the Taxation Enquiry Commission, 1953-54, Vol. III, p. 359.*

field may not serve the purpose because the State Governments have, in general, not treated municipal institutions with respect. In such a situation, it is doubtful if the State Governments will always observe the convention of reserving certain taxes for exclusive utilization by the municipal bodies.²⁵ It seems imperative to amend the constitution for reserving a list of local taxes to be exclusively utilized by the local bodies.

SHARING OF STATE TAXES

A strong case may be built up for local sales tax as imposed by local bodies in U.K and Canada. The sales tax would provide a very flexible fiscal instrument to the municipal bodies. But the goods taxed should have a high income elasticity of demand. The State Government may levy a surcharge on its sales tax for municipal purposes and distribute the total proceeds among the municipal bodies on the basis of an agreed and equitable principle.

In Delhi, Kerala and Mysore, the proceeds of the entertainment tax are shared with the municipal bodies. In Bengal, Delhi, Orissa, and in some other States a certain percentage of the proceeds from the motor vehicles tax are handed over to the municipal bodies. The municipalities in Bihar should also get a share of the entertainment and motor vehicle taxes.

The municipal finances should be linked with those of the State and Central Government through the mechanism of a Municipal Finance Commission charged with the responsibility of administering the grants-in-aid system and the municipal bodies' share in the pool of divisible taxes.²⁶

□

²⁵Mohit Bhattacharya, "Delimitation of Municipal Tax Jurisdiction", *Nagarlok*, Vol. III, No. 4, October-December, 1971, pp. 19-20.

²⁶Rural-Urban Relationship Committee has suggested for setting up of a Municipal Finance Commission.

*Urban Data Bank—Some Basic Issues**

P.K.S. NAIR, R.B. GUPTA

AND

V.S. BHATNAGAR

IN THIS paper, we have attempted to define Urban Data Bank, enumerate various steps to establish it with a view to identify critical problems with particular reference to Indian conditions and suggest some areas where research inputs are required. A detailed discussion on existing data system and urban data requirements is avoided except mentioning here and there to highlight the critical problems of data flow.

DEFINITION

An Information System is a logical organization of information elements intended to satisfy given needs. It comprises of:

- (a) a set of information elements—data concerning a person, a building, a block, an enterprise, a document, etc., and
- (b) the means for integration, retrieval, selection, processing and publication of this data.

The system dealing with information of interest for urban planning and urban research may be defined as an Urban Information System; Urban Data Bank is an open Urban information System. By open system we mean that information gathering, processing and retrieval are arranged with a view, not only to satisfy an exclusive group of people who created the system but also to make it efficiently amenable to general interest groups.

Like any other data bank, Urban Data Bank also consists of :

- (a) Basic Files

*Any opinion or comment appearing in this paper are personal views of the authors and not necessarily of the organization in which they are working.

- (b) Filing System; and
- (c) Data Processing System.

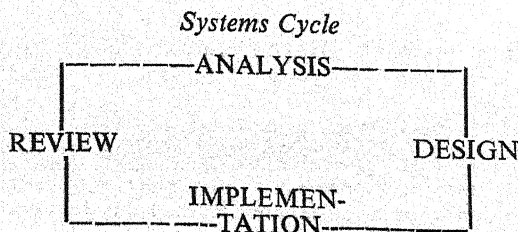
The sets of data of the Bank are known as files. The basic files of data base contains data on entities in the same category. The filing system makes it possible to updata the files and to integrate data from different files relating to the same entities. Data processing system allows users to extract relevant information from the files to meet their needs.

NEED FOR URBAN DATA BANK

Need for information for adopting scientific methods in policy formulation, goals identification, decision making, evaluation, monitoring and research hardly requires any emphasis. In the field of urban development, we are yet to organize a systematic procedure of management of data in India. Often data on vital aspects are not readily available; and, where available, in many cases, the problems of time lag and unquantified reliability. Also there is no attempt to update, improve and properly maintain data collected for some specific projects. Generally most of the required data are available with unidentified sources in unorganized form; and since the information flow is not organized, one has to work without data or go for a costlier process of collecting them on *ad hoc* basis. In a developing country like India where we should attempt to optimize between and within temporal, sectoral and spatial elements of development, there is a dire need for establishing data bank, particularly in urban sector, where comparative scales of planning are accentuated and inter-relationships complex. It is often misunderstood that, to start a data bank, a minimum development level is necessary and we should start with a complicated, and the latest technique of information system. This is far from true. System can and should develop gradually and progressively over a period of time.

STAGES

In any systems approach, there are broadly four stages, *viz.*, system analysis, system designing, system implementation and system review. And the cycle goes on as indicated below:



In the system analysis, the present usages of information like data elements, users, sources, procedures, needs and gaps, etc., are analysed and a feasibility report is made. By clearly defining the purpose of the system, utility of information from data, organization of flow from source agencies, streamlining the procedures, etc., a new system (normally computer based) is designed. Implementation is done at two stages—firstly on experimental basis and secondly, on full scale. The design is reviewed and modified after the experimental study, if necessary, and full scale system is implemented. Normally, where some kind of data system is operating, the prevailing and proposed are concurrently run with a view to: (i) assure continuity; (ii) check and correct errors: and (iii) prove efficiency of the new system to the users.

These broadly mentioned stages can be further detailed as under:

Phase I—Planning

- (a) Inventory of potential users.
- (b) Analysis of decision making or research oriented process of users.
- (c) Identification of data:
 - (i) Stock taking of existing data use;
 - (ii) Selecting data by assigning priorities, checking redundancy.
- (d) Inventory of data suppliers
- (e) Procedure of data collection and specification on network of flow of information.
- (f) Output requirements (general and specific), types of reports (tables, maps) and its periodicity.
- (g) Hardware, Software, development of system.
- (h) Input (card), designing and output format specification.
- (i) Personnel and training.

Phase II—Pilot Study

- (a) Application of system in selected areas.
- (b) Comparison of existing and new system.
- (c) Review and modification in system design.

Phase III—Final Stage

- (a) Modified design applied on all India basis.
- (b) Review and modification, if required.

On a moderate scale, Phase I may take about one to two years, Phase II one to two years and Phase III three to five years. There should be a national committee on Urban Data Bank to review the three phases of work mentioned above. The centralized staff to assist the national committee should consist of specialists on each aspects of data, viz., statisticians, economists, sociologists, geographers, engineers, architects, system

analysts, data bank experts, technicians, publication experts and administrative staff.

PROBLEMS ON DATA FLOW

Once the data requirements are finalized, they will have to be categorized on the basis of availability, accessibility and priority so that data flow can be organized. Without properly understanding the problems of data acquisition, whether it be from primary or secondary sources, there is tendency either to oversimplify them, which will be self defeating or overestimate them, which will make the system a non-starter. We will attempt to identify some of the data flow problems.

Data can be classified as under:

- (a) available in published forms;
- (b) available in unpublished form; and
- (c) not available.

General problems under these three categories are discussed below:

Data Available in Published Form

A lot of information is available from published or mimeographed reports and tables. Once they are identified, access is relatively easier. (Some of the mimeographed documents meant for limited circulation may not be easily available). But one is generally encountered with four major problems in the printed and/or mimeographed information. These are:

- (i) time lag (sometimes up to 9 years).
- (ii) too much aggregated (abstracts made for specific purpose, hence hide useful information for other users);
- (iii) unquantified reliability (whether survey is on census or sample basis, estimation of sampling and non-sampling errors are not generally made); and
- (iv) Conceptual differences. (both time series and cross section data suffers this deficiency and, therefore, aggregation problems arise. Also there is constant change of spatial boundaries which also requires adjustment for past data).

Data Available in Unpublished Form

All the problems mentioned in the previous para are applicable in this case also. Compounded with them are:

- (i) the source agencies of information are not generally known; and
- (ii) accessibility is extremely poor.

We believe that most of the data required for urban planning and research can be collected from secondary sources, either from published or unpublished sources provided this information flow is channelized properly. Most of the changes happening in urban areas are recorded in some form or other in a number of offices for their own purpose; and with some modifications and systematization, these can be filled into a general urban information system; of course, the conceptual problems, if any, will have to be tackled separately.

Unpublished data (even the processed data meant for publication) are treated provisional in one sense or the other and there is a general reluctance to part with the information. Added to this is the feeling that:

1. it may be inconvenient to the data collecting agency if the information given by them is contradicting with that given by other agencies on similar variables; or
2. analysis of results based on the information are likely to expose negative factors; or
3. source agency does not appreciate the utility of the information collected by them to user agencies; or
4. why to part with information collected by the effort put in by source agency to other agencies ; or
5. parting of information may lead to additional burden of work to source agencies on retrieval, modification, etc.

Excepting where supply of information may encroach on privacy of individuals or institutions and where confidential nature of information is involved or endanger security of nation, it should be incumbent on the part of source agency to part with the information to any bonafide user and required authority should be vested with an official working in the source agency who should be responsible for supplying the information. He should know the type of information available within his organization and adequate knowledge should be assured to public and private institutions and individuals. This arrangement will avoid the necessity of a data user going from pillar to post in search of information. All critical data should be tabulated systematically and it should be possible to retrieve them without allowing them to be buried under dust.

Another critical problem with the above two kinds of data is that spatially disaggregated information which is so vital for urban planners and research workers are not maintained.

Data Not Available

For data which are not available, the obvious solution is to collect them from primary sources. Whereas changes brought about happening in the data can normally be made available from unpublished and published records,

base data may not always be available. Therefore, for the sake of updating and also for correcting the updated information for filling up gaps, primary survey should be undertaken at regular intervals. The advantage in this case is that the user need not adopt himself to the limitations of data available but can design it in the form desired by him. The general problems of survey, which are not enumerated as they are well known, are, of course, inherent in these situations. Priority of information and cost of acquiring data are two factors which would determine the selection of variables of survey and their phased coverage.

Another important information gap for urban Data Bank is the non-availability of maps of appropriate scale. In order to generate maps indicating existing land use, variations, intensities, qualitative differentiations, etc., the statistical information has to be identified by localities and by developing geo-processing techniques. Such detailed maps are probably not available for all towns and cities; and wherever available, they are not easily accessible.

RESEARCH INPUTS REQUIRED

Urban Data Bank is yet to make a beginning in India. Hence there are a number of problem areas where considerable research inputs are required. Development of the system, need not wait till these problems are solved (it is a continuing process) and both should proceed hand in hand. In a computer based system depending upon the hardware capabilities, a lot of development is required in the software aspect. A number of routines have to be developed on the basis of a system designed to meet output requirements. Considering that both numerical and practical information will be available, research inputs are required on developing computer programmes for generation maps of different requirements. Development of Geographic Base File (GBF) and Dual Independent Map Encoding (DIME) technology was an outgrowth of a decision by United States Census Bureau for conducting 1970 Census of Population and Housing by mail. Now its utility has widened and many other organizations, particularly those who are dealing with urban problems are increasingly adopting this technology. The concept of DIME is derived from graph theory in which a given point is described in terms of its location by XY axis. All the intersections where a street or a special feature intersects with another street or feature, comes to an end or changes direction (referred to as node points) are labelled with identifying number. The line between two node points with direction, its name, address on both the sides, blocks, tracts, etc., are also uniquely numbered and included in the file. The Dual parts of DIME refers to the fact that the basic file is created by coding two separate sets of information, viz., *nodes* and *areas* enclosed by nodes and line segments. To blend the local data files with CBF/DIME file, the U.S. Census

Bureau developed Address Matching (ADMATCH) programme.

In order to accommodate the dynamics of growth of urban areas which is reflected by constant modifications in the political, statistical and geographic boundaries, there is need to keep the files current and this requires correction, updating and extension. Therefore, as a follow-up of GBF/DIME, CUE programme was also developed.

Development of programmes in similar lines will enhance the value of information for planning, monitoring, evaluation and research activities considerably and this also ensures confidentiality of data by converting personal information to area information.

Urban Data Bank Management is also quite an important area where considerable research is required since Urban Data Bank is expected to give accurate, quick and useful reports and maps of present and future situations on urban activities and possible alternatives which are extremely useful for rational decision making. In order to ensure accuracy and speed, the personnel employed for organizing flow of information has to be appropriately managed. They have to be appropriately trained so that their capabilities are improved to develop and maintain the system at the peak efficiency level. For this, the type of skills, training and incentives have to be identified.

One area which is not directly involved in the development of information system but will help to enhance the value of the system is development of quantitative techniques in planning decision making and evolution techniques. This will enable to develop many programmes which can be put as part of the roots in the system, and many preliminary decision making and evolution can be done by the computer itself without referring to the user. A lot of flexibility in building up of alternatives will be possible thereby enabling the planners to ultimately choose a more rational process of development required for urban planning. □

REFERENCES

1. Jean V. Salmons, "Main Steps in the Creation of a Data Bank for Decision Making, *Industrialisation and Productivity Bulletin 19*—United Nations.
2. Jerry C. Coiner, "Concepts of Urban Information Systems with Application to India, *Nagarlok*, (1977), Vo. IX, No. 3, pp. 1-12.
3. GBF/DIME, Dollars and Sense—A Nations's Cities Special Report: Nation's Cities.

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3. GBF/DIME, Dollars and Sense—A Nations's Cities Special Report: Nation's Cities.

Book Review

Process of Urban Fringe Development: A Model by K.N. Gopi, Delhi, 1978, pp. 120, Rs. 35.

In this book Dr. Gopi has examined the entire phenomena of the transformation of a fringe settlement, namely, Uppal under the impact of the expansion of Metropolitan Hyderabad. It has been established in the study that due to Uppal's strong linkages with the metropolitan economy, not only its land use pattern has changed but its entire societal structure has undergone a radical transformation. However, the process is gradual and directly related to distance and accessibility from Metropolitan Hyderabad.

The book is organized into six chapters. In Chapter I, the author discusses the suburbanization trends around Metropolitan Hyderabad which have caused structural changes in the economy of peripheral settlements. These characteristics are stated to be epitomized in Uppal. Besides, a brief account of the methodology and the environmental setting of Uppal are also dealt with in this chapter. In Chapter II a detailed analysis of the demographic and social structure of Uppal is made while the economic structure forms the subject matter of Chapter III.

In Chapter IV an analysis of the interaction pattern between the central city and the fringe settlement is made with an object to get an insight into the urbanization process in the fringe settlement. Chapter V presents a general view of the process of urban growth and fringe development, as observed in Uppal. This ultimately enables the author in developing a typology of fringe settlements which is evolutionary in character and is marked by a specific set of economic activities, social system and morphological features. Lastly, Chapter VI is comprised of the summary and conclusion of the study.

The attempt made by Dr. Gopi is appreciable. Perhaps an overview of literature on the subject, howsoever scanty, would have enriched the study more. Also, it was needed to incorporate in the study the questionnaire used for collecting household data.

Above and all, the author though admits in Chapter II the importance of the city's influence on the social structure of the local community, but has not given any due consideration to studying the slow and gradual loosening of the rigidities of Uppal's caste-based social organization and change in the life-style of the community,

—GIRISH K. MISRA



Book Note

Proceedings of Workshop Series on Calcutta 2000—Some Imperatives for Action Now, Indian Chamber of Commerce (Civic Affairs and Tourism Sub-Committee), Calcutta, 1978, pp. x + 277, Rs. 25.

SOME SALIENT OBSERVATIONS

Calcutta's Future Role

In order to delineate the future role of Calcutta, it is important to keep in view its status as 'a national city of the first order' besides its roles in the 'regional', 'state' and 'metropolitan' contexts.

Population Dispersal—An Important Precondition for Future Wellbeing

Whatever the future role, it needs to be underlined that 'population pressure' would continue to be the single most crucial constraint for the future well being of Calcutta.

As such, besides paying greater attention for the success of the National Family Planning Programme, it is strategically important in Calcutta's interests, that 'the attractiveness of other areas' be increased manifold so as to reduce the burdens on Calcutta placed by the job migrants.

This can only be achieved through a 'frontal attack' on the 'economic backwardness' of Calcutta's vast hinterland which spreads over a 9 state region.

Spatial Economic Planning—for Population Dispersal

Dispersal of economic and employment opportunities—both in the industrial and agricultural sectors, in the hinterland region, must constitute the basic plank of any well-conceived policy for preparation of any 'spatial economic plans'—for the region as a whole; and such plans should be implemented vigorously, at an accelerated time schedule.

Within this region, the economic roles of the already existing urban centres, whose urban populations lag behind than that of the Calcutta Metropolitan District should be substantially enlarged.

Within the State of West Bengal the future industrial role of the areas bounded by the Haldia-Durgapur-Calcutta triangle should be properly charted out.

Also definite plans should be pursued for industrialization of Siliguri and other growth centres in North Bengal.

The economic role of the District Headquarter towns and Agro towns should be substantially enlarged to serve the agricultural hinterland.

The Deficits in Hinterland Areas of the Available Economic Infrastructure

It is to be noted that as per the present state of development, the deficits in the available economic infrastructure in the hinterland areas constitute the single most important constraint for the industrialization of the backward regions—and, for that matter, even for agricultural progress.

Initial governmental investments, on a substantial scale, are thus unavoidable if the vicious circle to be broken—and, in all investment planning for economic infrastructure, a built-in bias in favour of the backward areas is the only available remedy.

Through such investment Government's aims should be to ensure that the rail and road networks are enlarged and improved; adequate power and telecommunication facilities become available—and due attention is paid even to other urban amenities such as housing, drinking water supply, schools, hospital, etc.

In this connection it was noted with grave concern that deficits are being allowed to persist even in an area like Haldia where substantial investments have already been planned for—and it was pointed out that Haldia may go the Kalyani way if remedial actions are not quick and commensurate with the needs.

It was noted that there is need for CIDCO type of 'industrial location studies' for the entire state of West Bengal so that the industrial potential of various parts of the State is properly identified and costly errors are avoided in locating future industries.

Consistent with the findings of the 'industrial location studies', it was noted that 'spatial master plans' are needed for 'power generation and distribution' and such Master Plans should take into account the following:

1. the correct balance between the thermal and hydel power generation schemes—considering the potential of various areas;
2. among the thermal units, the correct identification of the locations for the thermal plants—at coal pitchheads and elsewhere; considering the overall economies of generation and distribution;
3. the sectoral requirements for power—for agriculture, industry, transportation, etc.—and the built-in possibilities for managing the peak-load requirements;
4. the costs of production and distribution—so that the overall objec-

tives of industrialization and agricultural advancement may be achieved, and

5. investment planning and advance actions in a manner that a continuous impact is visible in the matter of easier supply of power.

Next to power, the communication facilities, including telecommunication needed the priority attention of the government—if even an initial breakthrough is to be achieved.

The need was highlighted for special investigations to define the new role of the Calcutta Port keeping in view the Farakka and Haldia development; and it was emphasized that the Port is vital for the future of Calcutta.

The Future Economic Role for the Calcutta Metropolitan District

It was the unanimous view of the Workshop that industrial expansion in Calcutta City proper be rigorously controlled – and, whenever the Town & Country Planning legislation comes into force (a matter which by itself needs top priority)—suitable strategies be considered for relocation of the ‘non-conforming’ industries—so that the health and traffic hazards in the city centre could be reduced.

It was felt that while the fringe areas in the Calcutta Metropolitan District, i.e., leaving aside the Calcutta Corporation and a few other Municipal areas—still possess the potential for the industrial expansion, however, there is need to discipline the new industrial growth in these areas.

Due to the environmental constraints, it was advocated that only technologically more sophisticated, high-value-adding, non-pollutant industries, be allowed in the remaining areas of the Calcutta Metropolitan District.

The needs were highlighted for many more medium and small scale industries which would aim to cater to the ‘consumer needs’ of the large population of CMD—many of which, such as even ready-made garments, are currently being satisfied through imports into the area, from elsewhere in the country.

It was pointed out that the problems of CMD’s engineering industry are due to its linkages and its overdependence on the traditional markets such as for wagons.

It was stressed that the State’s deficits for agricultural equipment are so large, that only by reorienting itself to the needs for engineering inputs for the farmers, the engineering industry can ensure its ever bright future.

Similarly, it was noted that the tertiary sector in the CMD also suffered from its overwhelming dependence on the traditional jute and engineering industries and it had grossly overlooked the vast unfulfilled population-

based needs which, must, now, be satisfied—both for its own good and for that of the CMD.

It was vigorously advocated that Calcutta, for one, should now take notice of the rural population's consumer needs and, in their own interests, Calcutta's industries should start planning for the rural markets too—and, not remain content by catering to a mere 5-10 per cent of the 30 per cent urban population.

Among the most unanimous views expressed at the Workshops, was that Calcutta's 'economic services role' should be enlarged manifold—and Calcutta must become an effective 'Eastern Capital' of the country in the matter of banking, finance, insurance, engineering, design, consultancy—and for a host of other professional and economic services.

Decentralization of decision-making powers, and basing of high ranking officers in Calcutta who can take final decisions was considered to be extremely urgent if such an economic services role is, at all, to be realized for Calcutta.

It was noted that there exists a need for a much larger 'institutional role' for Calcutta—and the high powered research, manpower development, and professional institutions have much to gain from the vast intellectual reservoirs of Calcutta.

It was stressed that in fields of higher technical education, management education with all its diversifications, and technical manpower training and development opportunities for various levels of personnel, Calcutta has already fallen behind substantially—and over a period of time, the problems arising from such a deficiency can assume huge dimensions—if proper attention is not paid now.

It was stressed that Calcutta can no longer afford to overlook the potential of the tourism industry particularly when due to its extremely rich cultural heritage it has to gain most from this industry.

It was advocated that whether it is the problem of image due to its garbage heaps, or for the lack of tourism infrastructure such as hotels, entertainment places, etc. Government must take all the remedial measures to restore Calcutta to its one time position of being the premier tourist resort of the East.

Spatial Planning—Old Calcutta and New Calcutta

Despite the unplanned, haphazard growth of Calcutta, it was noted with great concern that the Government had so far not put the Town & Country Planning Laws on the statute books.

It was pointed out that due to the rebuilding spree which was on, many valuable opportunities were already being lost for creating some sort of an order in an extremely disorderly situation—and, hence, any delays in this legislation would mean perpetuation of the chaos which characterized present Calcutta.

It was stressed that once the new legislation is passed, land use controls should be enforced with vigour and most expeditiously.

Such land use control measures should particularly attack the 'non-conforming uses of land' both from health and traffic viewpoints.

With reference to the Theatre Road-Camac Street developments of the late nineteen sixties and early nineteen seventies—it was strongly stressed that but for advance 'development control actions', by way of 'revision of street alignments and building lines', and 'regulation of new construction according to the traffic-handling-capacities of the street system in the given vicinities' as also 'the capacities of the underground drainage and sewerage systems' unmanageable situations are bound to arise—and, if anything, the city centre is bound to deteriorate beyond any future remedial actions.

Hence, it was urged that in the matter of enforcement of 'development controls', neither should any further time be lost, nor should any laxity be shown if the overall interests of the citizens at large are to be protected.

It was stated that while traffic and transportation strategy for improving the linkages through improved transit corridors with the hinterland areas was sound, Calcutta cannot overlook the critical needs for opening up the Central Business District for improved traffic and as such revision of street alignments and regulation of abutting land uses should receive the priority attention—despite the fact that these are long term measures—and other traffic improvement schemes which can provide immediate relief should also be conceived.

It was urged that the jetties and godown on Strand Road should make way for the transportation system's needs—so that a much widened Strand Road and Strand Bank Road become available for re-routing the bulk of truck traffic outside the city—as also for taking care of the traffic diversion needs, once the MTP work gets under way along Chittaranjan Avenue.

It was noted with satisfaction that initial plans have been drawn up for locating Truck Terminals near the fringes of the city and suitable warehousing facilities were proposed to be created. It was stressed that those plans should be implemented according to a strict time schedule.

It was observed that numerous obsolete land uses continue to persist in some of the most high priced areas of Calcutta—such as the Jails in Alipur, the Government Printing Presses in Dalhousie, the Old Mint, and many such others. It was urged that Government, being the landlord, should exploit these valuable lands, both for satisfying certain critical metropolitan needs for land as also for earning sizable revenues.

It was also pointed out that the 'economic returns' from land in the

city centre were not commensurate with their full potential.

In this regard, particular attention was drawn to the 'low order' uses of land in some of Calcutta's most high priced areas such as for warehouses and godowns in Dalhousie and Burra Bazar areas and, it was pointed out that, but for governmental intervention, such obsolete land uses would never be changed. It was urged, therefore, that Government should provide the appropriate leadership in this regard.

It was pointed out that Calcutta's commercial infrastructure is grossly inadequate—even for the present level of the economic activities in this metropolis. The same Dalhousie Square and Burra Bazar, which are literally bursting at the seams, continue to be the nerve centres for trade and commerce.

It was strongly urged that decentralization of Calcutta's wholesale and retail trade, establishment of a World Trade Centre facility, and opening up of new office areas are all such needs for which actions cannot be postponed even by a day now.

It was pointed out that the fringe areas of Calcutta, many of which have a reasonable industrial base, have not realized their full economic potential in terms of the population they support as urban infrastructure has been grossly inadequate. The need for making up such deficits particularly in the industrial suburbs of the CMD was highlighted.

Organizational and Fiscal Preconditions

It was observed that multiplicity of planning and development organizations had compounded the difficulties for tackling the extremely complex problems of the Calcutta Metropolitan District.

To ensure proper and effective leadership, it was felt that one Government Department should deal with all urban matters so that a Statewide policy on urbanization and urban development could be enforced.

It was noted with satisfaction that some initial measures had been taken to bring the various planning and development agencies under one umbrella but, this process needed to be pursued to perfection of the institutional framework.

Great concern was expressed about the structure, and functioning of Calcutta Corporation. It was urged that streamlining of the structure and professionalization of the civic cadres was absolutely essential to improve the quality of civic services.

It was stressed that despite all the organizational deficiencies of Calcutta Corporation, one cannot overlook the fact that it operated from a very poor financial base.

The overhaul of the property tax system in Calcutta was considered unavoidable if this largest single source of civic revenues was to be exploited for its full potential.

It was stressed that in the pricing of urban amenities, in a situation as

in Calcutta where a large number of its residents do not contribute at all to the civic exchequer—the broader question of the ‘political economy of urbanization’ had to be considered—and, it was to be decided as to how the urban poor may be accommodated so that the contradictory economic and social constraints of the current situation could be balanced.

It was pointed out that developmental investment of a few hundred crores in the renewal of the city’s urban infrastructure was too small in relation to the several thousand crores that must be spent to bring Calcutta, at least, to the barest minimum competitive levels with other cities in India.

However, it was urged that Calcutta should aim to earn by itself some of the resources for development and a beginning in this respect was overdue.

It was further stressed that land should be exploited as a resource—and the several hundred government lands and properties in prized locations should be exploited to this end.

It was pointed out that the private sector’s investments in any urban area far outweigh the public sector investments—and as such Government’s policies and concerns should be for the investments as a whole, and not only for its own programmes.

Measures that can attract private investment should, therefore, receive due consideration of the Government.

It was indicated that notwithstanding the recent World Bank loans, Calcutta has not fully exploited the resources available from institutional agencies such as the Life Insurance Corporation, the nationalized banks—and appropriate attention needs to be given in this direction too.

GENERAL

It was recognized that these Workshops had provided only a limited opportunity for highlighting diverse issues that needed to be kept in view in planning for the Calcutta of the 21st century.

The Workshop stressed the need for in-depth probes on numerous fronts so that the policy-makers are adequately equipped for the difficult decisions that they must make.

The major investigations for which the need was highlighted at these Workshops are:

- (a) ‘industrial location studies’, for the various Districts in West Bengal;
- (b) studies for preparation of ‘spatial economic plans’ in the regional and State contexts;
- (c) studies for ‘spatial distribution of future power plants’;

- (d) a study on the future role of the Calcutta Port; and
- (e) a study on the training, education, and manpower development needs for the District, the State, and the Region as a whole.

It was suggested that the Chamber itself may take the initiative, in subsequent years, to see that such investigations are conducted by some agency or other. ☐

Urban Development

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Editorial

Habitat management is not merely management of housing and shelter; it primarily involves enhancement of the quality of life of the people by facilitating satisfaction of the basic needs including employment, health, services, education and recreation. As in any Third World country, the Indian habitat scene presents a grim picture of disparities not only between rural and urban areas, but also among the various income groups in these areas. The disparities are manifest in the quality of living environment, housing, services and economic opportunities available for the majority of the people in our country. Whereas the lack of economic opportunities in rural areas has been resulting in an exodus of people to the urban centres, the latter have been proving increasingly incapable of accommodating the rural migrants by providing them a tolerable living environment and a source of livelihood.

The problem of habitat is ineluctably linked up with the broader problems of economic development as was also recognized at the Vancouver Conference on Habitat in 1976. But even with the existing level of economic development and financial resources, there exists various policy options for a proper management of the habitat. The existing Indian situation demands a package of realistic programmes by striking a balance between housing, shelter, services and work places. This calls for a reorientation of our planning policies and urban development programmes which have unfortunately been elitist in character.

This Special Issue highlights some of the important aspects of Habitat Management. We would have been happy to include a wider range of issues involved in the subject but this could not be possible; primarily it would have needed more time to secure greater response from experts. Nevertheless, it is hoped that this Special Issue will succeed in inviting attention to the variegated problems of habitat management. We are grateful to the authors who have contributed to this Special Issue.

—EDITOR

The Urban Malaise: A Problem in Management

J.B. D'SOUZA

PROFESSORS, POLITICIANS and other learned men habitually groan and moan about our cities: they are no longer fit for heroes—and of course for professors and miscellaneous learned men—to live in, even if they remain congenial places for politicians. Our cities have indeed changed. Bombay, for instance, has packed an astonishing 2 million additional human beings into the same 169 sq. m. that made it up 10 years ago. Delhi, in partial contrast, has grown in area as well as in population: population pressure there is not quite as visible as it is in Bombay or Calcutta. Most other cities in India—Bangalore, Poona, Kanpur, Hyderabad—have similar growth histories: their populations have expanded immensely, and some of them have added to their area as well.

There are generally two predictions that one can confidently make about nearly all our urban centres: one, that they will continue to grow in population, and two, that our city managements will remain inadequate, as they now are. So that our prophets of doom and gloom, who regularly tell us how rapidly our cities are deteriorating, will have the satisfaction of being proved right.

Before we surrender to this undiluted pessimism we ought to remember that we have been hearing these dismal predictions for over twenty years. Nemesis has been just around the corner, we have been steadily told. Has it arrived? Are we then in the midst of a desperate urban crisis in India today? Or is it simply that we in the middle and upper classes are worried about the cities because the poor have invaded them in large numbers, and have now become more visible there? Twenty or thirty years ago the poor were far less obtrusive; there was an effective class apartheid. Today Bombay's poor live in shanties squeezed in among the city's luxury apartment houses, and get in the way of the cars of the affluent. They compete for living space and road space, for medical facilities and water and transportation.

What has happened, of course, is that poor people from the villages have kept coming to the urban centres for many years, in search of better

lives. Clearly, we cannot expect to confine them to rural India, keeping the cities as islands of affluence in a bleak and impoverished country. Villagers will remain in their villages only if their lives there become as attractive as life in the cities. We unthinkingly and helplessly deplore this flow of people—about 30 million in the decade of the 'sixties—instead of doing what we can to cope with it.

Rationally, we need to lament the influx only if on the whole people in the towns consequently live more wretched lives than they would if they stayed at home in the villages. Clearly they do not, because they would in that case go back, and we could suspend our lament. In fact, the reverse flow from town/city to village is minimal; in no State did it exceed 11 per cent of total migration observed in 1971¹. So that even after allowing for all the miseries and discomforts that such migrants in our cities suffer, you must conclude that they are still better off than they were in the villages.

They are generally better off in money terms, because their opportunities for gainful employment have increased immensely, and their money incomes are generally much higher than they were in the villages. But their advance has more to it than just money income: their access to drinking water, to health services, to schools, to entertainment facilities has become real and tangible. And the vistas of opportunity that the cities offer them are a welcome escape from the irrational compulsions and caste taboos that rural society imposes on poor people.

This is of course as it should be. India cannot be a country spotted here and there with cloisters of affluence that leave its vast poverty stricken masses out in misery. Yet there is cause for concern: should we let our towns turn into dirty, congested concentration camps in which living conditions could be even worse than they are in the villages? Can we be complacent about our urban ghettos in which poor people don't get safe water to drink, garbage is never removed, sanitation does not exist, and crime flourishes?

Till now our answer to questions of this kind has too often centred around a recourse to the bulldozer. We have tended to imagine that demolishing squatter hutments here and there, or even on a large scale as in Delhi in 1975, is in some sense a 'final solution'. Apart from the hardship and misery that such wanton measures cause, the policies underlying them overlook the contribution that these people make to the economy of urban areas—a contribution that is totally disrupted if they are relocated at places on a town's periphery.

The urban poor are involved in diverse occupational roles. First, there are the unskilled and skilled construction workers. While some

¹*Birth Place Migration in India* by G.K. Mehrotra. Census of India 1971, Special Monograph No. 1, 1974.

among them move back and forth between the city and their villages of origin, the majority stays on the city moving from one construction site to another. In a growing city like Delhi, construction is a major industry and workers always find or hope to find work. Second, there are those employed in low paid jobs as unskilled workers, porters and loaders in the markets, shops and railway stations, rickshaw pullers, horse-and bullock-cart drivers, domestic servants, cooks and hawkers, and other miscellaneous service occupations requiring no specialized skills. Third, there are those engaged in public undertakings, Government and semi-Government agencies and private offices as peons, watchmen, other unskilled office workers, semi-skilled technical and service personnel. In the manual occupational categories are included those who work as mechanics, fitters, metal workers, scooter, bus and taxi drivers, electricians, plumbers, wiremen, moulders, painters, tailors and other manual occupations requiring some skill or vocational training. Fourth, there are hawkers, peddlers, wayside restaurant owners, vegetable and fruit sellers, grocers and other petty retail traders. Fifth, there are those engaged in traditional occupations and cultural trades as scavengers, leather workers, potters, carpenters, blacksmiths, basket-makers, weavers, doll-makers, washermen, barbers and others occupied in various household and cottage industries. Sixth, there are those employed in various industries and repair workshops as skilled, semi-skilled and unskilled workers. Lastly, there is a small proportion among the urban poor who are semi-professionals like compounders, midwives, school teachers and white-collar workers like clerks and accountants. Thus, the workers among the urbanizing poor are integrated in the urban economy at the lower levels in the trade and labour-intensive service sectors. Nonetheless, they are all essential for the efficient functioning of the urban economy at its present stage of development and the use of technology. They can only be replaced at enormous additional cost of the city's economy.²

But few of those who run Indian cities are alive to the needs of their cities' economy. And in any case they are generally caught in a dilemma. On the one hand, they are at their wits' end to find the resources to meet their obligations to the regular citizens. On the other hand, there is thus unending growth of the numbers they have to serve, a growth due in roughly equal proportions to invasion from the villages and to the natural increase of the people already in his city. The city manager sees himself as caught in an uncomfortable squeeze, from which he is tempted to look to the bulldozer for relief.

²Alfred de Souza (ed.), *The Indian City, Poverty, Ecology and Urban Development*, Manohar, New Delhi, 1978.

But is that this only option? I suggest not merely that he has others, but that demolition is the least rational of them. Partly for the reasons already given—misery for the poor who are displaced and damage to the economy—and partly because it is seldom feasible politically to demolish on a really large scale; Delhi in 1975 was unusual, and hopefully not replicable. What then can a harassed city administrator do?

His next rational course of action involves the following steps:

1. He will re-order his priorities;
2. He will take a critical look at the norms and standards of infrastructure, building codes and bye-laws, identifying for change those that lack relevance to our situation;
3. He will tighten up his revenue assessment and collection practices to minimize tax evasion and leakage; and
4. He will intensify supervision over the conservancy and health services, which are notoriously slack.

Priorities in the city manager's plan of administration are often topsy-turvy. You would imagine that if the administration cannot place the needs of the poorest at the top of the scale it can at least try to ensure for all citizens equal access to civic facilities. This is seldom so. The poorest areas of a city are generally dirtiest, not necessarily because the poor have dirtier habits, but because they live more densely. Yet municipal conservancy departments give these areas less attention per resident than they give to sparsely settled upper class localities.

Water supply suffers from similar maldistribution. The New Delhi bungalow area of our capital, which houses VIPs gets over 60 gallons per head daily, whereas Shahdara's VOPs (Very Ordinary People) make do with 17. Meanwhile Delhi Cantonment, populated at about 6 persons per acre of land, gets over 90 gallons daily for each of them! Remember, of course, that Shahdara's 17 gallons is an average. Vast numbers of Shahdara's residents have to manage with very much less. Equitable water distribution is likely to cost the city less, because more water will go into densely packed areas, which offer economies of scale.

Take transportation, next. Much of our city manager's attention, and more of his city's money, go into improving the road system—making more roads, repairing and widening them, and regulating traffic to assist car owners to move about quickly. Here again disproportionate portions of the city's revenue are devoted to the comforts of relatively few people—money that could far more usefully be spent on improving a city bus system and discouraging private cars. Singapore has successfully adopted this policy for its areas of heavy traffic, but traffic authorities in India are far too sensitive to automobile owners' lobbies to countenance sensible reform.

The use of land, again, suffers from irrationality and extravagance that hurt the urban poor. City planning in this country has eagerly clung to the outworn theories and practices that western planners have long discarded, and has tried to divide the city's land into chaste zones, each neatly earmarked for a particular kind of use. The result : a curtailment of the land available for some particularly popular use and a consequent gift, in price escalation, to the owners of such land. Planners have forgotten that they are planning for our people and that this is not how our people want to live. The rigid segregation of land uses that planners prefer causes needless inconvenience and hardship, especially to poor citizens, by lengthening the time they have to spend on shopping, or educating themselves, or commuting to and from work. A settlement that has not had the benefit of our planner's attention is the walled city of Old Delhi, where consequently, the people's convenience is greatly enhanced, and where the quality of life would be much higher if the municipal body were to spend as much per capita on cleaning as its counterpart does in the bungalow area of New Delhi—all this at far lower cost to the city manager, because roads are so much less extensive, water supply and sewerage lines are shorter, and so on.

Chaste integrity in zoning is not the only part of our city planner's bible that needs change. There are other chapters too that he has imported wholesale from advanced countries. There are unrealistic lower limits on the sizes of house plots, which, in combination with land prices generally prevalent, effectively prevent vast numbers of poor people from acquiring land to live on. There are, similarly, minimum sizes of house plinth areas, and of rooms in houses, all designed to ensure that no one who has not already piled up some wealth will be able to own a home. There are prescriptions about the kinds of materials a house builder may use in construction, prescriptions that prevent him from using simple local materials (mud, thatch) that he can afford. All these restrictions (materials, plot sizes, etc.) militate against an economical solution of the problem of housing for urban poor. If our city manager can replace these imported irrelevant constraints by sensible rules appropriate to the life style of our urban poor, he will find that they can improvise housing that they will later improve into wholesome homes, reasonably well laid out and equipped, and largely free from the health hazards that today characterize the squatter areas.

I shall not deal with the relatively simple problem of adding to municipal resources by tightening up the tax assessment system and speeding up tax collection, both of which are notoriously lax in municipal administration. (A cogent, if amusing, demonstration of this was provided by a strike by the octroi staff of the Bombay Municipal Corporation in 1969. During the strike, octroi revenues broke all previous records !) Property tax assessments and collection practices too are astonishingly slack, and

lose for the civic body enormous resources that could easily be gathered into the municipal coffers. To name only one lacuna, an undervaluation by a junior tax officer cannot be remedied because hardly any municipal laws contain provision for appeal *by the municipality* against under-assessment, but large scale under-valuation, from which many city governments suffer habitually, is easily prevented by administrative measures.

On the subject of resources it is appropriate to take note of another peculiarity. Few municipalities resort to borrowing for their capital works programmes. Instead, they try to finance these works out of their current resources, a patently hopeless endeavour for even the wealthier municipalities.

The foregoing paragraphs, I believe, contain enough to demonstrate that our urban malaise—it is not yet a crisis—is primarily the result of a distortion of priorities and a failure to supervise adequately. The urban problem is a problem in management. At any rate, the case for drastic statutory change to augment municipal revenues or prevent rural migration can arise only after city managers really begin to manage.

□

Management of Human Settlements

C.S. CHANDRASEKHARA

THE PROBLEMS of the human habitat in India came to the fore even as early as in 1915 when the famous English sociologist Patrick Geddes was invited to visit India to advice on the development of the old towns in India. Reports of Patrick Geddes intensely reveal the extraordinary insight he had in regard to future development of the human habitat. Habitat problems have been under study and efforts have been made during the last sixty years to achieve some improvements in regard to the living conditions. In the last thirty years one could say that these efforts have been intensified and governments both at the centre and in the states have been involved in trying to deal with all aspects of the habitat including its management.

However, these thirty years of effort in dealing with the problems of urban areas and housing for the country has not been of much help and today we are even further away from solving those problems than we were twenty years ago. Urban expansion and development have overtaken us. While we have been adopting all the time a cosmetic approach, it is only in the late sixties that it was realized that the problems of the habitat were not due to any inadequacy of technical know-how, but bad and incompetent management has been at the root of all the ills and crises that have arisen regarding housing and human habitat. It is, therefore, imperative that management must improve before any investment in urban areas could be expected to produce returns or improve to any appreciable extent the habitat. Therefore, it is to the area of *Management* that maximum attention requires to be given in the immediate context.

The components of human settlement management are: resource mobilization, management organization, a clear decision making structure, participation of the people and lastly, an overall framework setting out the goals of management as well as step by step achievements of those goals. While there has been a great deal of innovation and experimentation in regard to the organizational structure of management, decision making processes, the overall framework, setting out goals, etc., little attention or effort has been made in regard to the mobilization of resources of both finance and skills and of people's participation in the management

process. The efforts made in the directions of innovations and experiments in the other aspects have been of no avail because of the basic shortcoming, the insufficiency of resources. In this paper an attempt is made to identify these two areas, namely, resource mobilization and public participation and to show how the resources already available could be mobilized and harnessed so as to bring about substantial improvement in the structure and functioning of the human settlements and provide therein a decent standard of living for the urban poor.

The mobilization of resources has been basically weak because of a serious lacuna in our constitution which did not make any provision in regard to the local bodies and their resources, leaving them to the mercy of the State Governments. The contrast between the local bodies in UK and USA who are constituted with basic powers and functions and are not dependent upon the state or federal levels for raising resources for discharging their normal functions and the local bodies in India which have only a secondary existence, deriving their authority from state laws and having no independent existence and always under the threat of dissolution shows a serious defect in the democratic structure of the country. The State Governments, especially, the legislatures, overwhelmed as they are by the rural vote and the vested interests which have a much bigger stake in the rural economy have taken no steps to improve the working of the local bodies. The Local Finance Commissions set up by some of the states made some excellent recommendations but these have not been given effect to by the legislatures and are unlikely to be taken seriously unless it is made a constitutional obligation. Until then the local bodies, especially, those who have experienced rapid growth, would have to find ways and means of fending for themselves and this means the mobilization of their own resources for improvement, expansion and maintenance.

While there has been a great deal of hue and cry that rural areas are being neglected, if per capita development expenditure in rural areas is compared to that of investment in the urban areas, one would be astonished to find the very low level of per capita investment in urban areas and yet their high level of contribution and performance within the national economic frame. Thus the human settlement faces an almost impossible situation, in fact, a crisis. They cannot expect much support from the State and the Centre is unwilling to get into a controversy of rural vs urban and has merely toed the line which the states have taken. The legislatures will not easily agree to the local bodies being empowered to enhance their earning through expansion of the scope of their taxation. On the other hand, attempts have been repeatedly made to weaken the taxation structure at the local level; as for instance, octroi is being abolished on the plea that it obstructs traffic flow; the revenue from property tax is being gradually eroded by state policies in regard to its inefficient collection and inadequate machinery that is made available for such collection. Vested interests

cause pressures to be brought to bear at state level to reduce and relax tax collection and to prevent development levy. In spite of this a recent survey in regard to local finance revealed the very substantial resources that have been mobilized and the ease with which mobilization can be enhanced through improved methods of levy, collection and accounting.

The resources presently available to the local bodies are: Property tax octroi, cess on water, drainage, education, health, rents from both commercial and non-commercial enterprises, licence fees, *tehbazari*, i.e., the income raised by permitting trading establishments on road sides and municipal land, and lastly, tax on professions, trade and employment. The Taxation Enquiry Commission observed that one of the greatest drawbacks of the local bodies has been their inefficiency in tax administration. To remedy the situation it recommends, "firstly that all municipalities should have Chief Executive Officers in whom the executive powers and administrative powers and responsibilities should vest by statutory provision, and secondly, that the Chief Executive Officer should be selected and appointed by Government or by an independent statutory board."¹

The Taxation Enquiry Commission's recommendations unfortunately fell very much short of what was actually needed. The mere appointment of a Chief Executive Officer has only increased job opportunities to administrative personnel in the state government but has not in any way improved the financial resource situation of the local bodies. The Chief Executive Officer by himself is, in the majority of the cases, a non-starter. All that was actually needed was the institution of an efficient well trained tax levy, assessment and collection machinery at the grass root level. If such a machinery had been introduced with a self-corrective device, then it would have been possible for the local body to up-date its tax assessment, gear up its collection drive and build up the resources of the local body to meet its maintenance as well as development commitments. The present situation is that the Chief Executive Officers appointed by the state government have attended to their own interests in seeking opportunities for promotion and have become birds of passage so far as the local bodies are concerned.

Before we come to a discussion of the type of organization needed, an examination of the situation regarding the income of the local bodies would be worthwhile. The financial resources of the local body which comprise of: (1) tax income, (2) non-tax income, (3) ordinary grants, and (4) extraordinary grants for capital improvements were estimated in a recent study² and the picture revealed is given in the Table on page 10.

¹Government of India, *Report of the Taxation Enquiry Commission 1953-54*, Vol. III, pp. 370 and 371.

²TCPO Study on Income and Expenditure of Urban Local Bodies, 1978 unpublished.

<i>Head</i>	<i>Amount in lakhs Rs.</i>	<i>Percentage</i>	<i>Per capita in Rs.</i>
Tax income	34,563	56.85	36.3
Non-tax income	13,455	22.13	14.1
Ordinary grants	7,275	11.97	7.6
Extraordinary income (Capital Account).	5,501	9.05	5.8
Total	60,794	100.00	63.8

Thus the grants including capital grants is about one fifth of the total income and as it is, today the local bodies have been raising more than 78 per cent of their resources and have been undertaking maintenance as well as capital improvement programmes on their own.

The conditions under which these revenues have been collected are revealed in a number of studies on local finances. There has been substantial under-assessment of property in respect of property taxation. In some cases, the assessment is 15 years old and has no relation to the present values of the properties. There is substantial gap in the collection of taxes and the gap is estimated to vary from 25 per cent to 55 per cent. There is also substantial leakage in the collection of taxable income of all types, especially, octroi where it is levied. The basis of assessment, namely, rateable value has not worked out well and there is need for changing over to capital value for taxation. The reasons attributed to this slack in collection are the unwillingness of the elected body to revise the rates of taxation because of likely adverse effect on their future elections, the pressures exerted by the vested interests to keep the taxation level low and the leakages engineered by them.

There is no doubt that substantial resources exist in urban areas as manifested in the form of high demand for urban property, high price of land, construction of palatial bungalows, luxury hotels, markets, cinemas, etc. If the rural dweller is not to subsidize urban living conditions, then every urban dweller shall have to bear a proportionate burden of the cost of services and its maintenance which include roads, sanitation, water supply, markets, schools, hospitals, recreation, employment and so on. Such a burden can be distributed on the entire urban population in terms of groups and individuals according to a proportionate system of direct and indirect taxes. The taxes paid by the property owners are in any case transferred on to the tenant, the buyer and the consumer. This would require each local body to collect taxes from its citizens so as to meet the entire running expenses of the local body incurred in providing a minimum level of basic and essential services.

The cost of providing minimum essential services and amenities in

medium sized urban centres translated in terms of property taxes works out to two to two and a half month of rental value on every property. In order to ensure that this is levied and collected, the state government will have to take the following actions:

1. Enact a law or amend the municipal act prescribing a minimum level of property tax which the local bodies should levy, worked out on the basis of annual income and expenditure.
2. Create state tax assessment and collection organization to help the local bodies to bring up to-date their property assessment and to assist them in the collection.
3. Simplify the settlement of disputes regarding tax assessment and collection on the same lines as income tax assessment and collection.
4. Enable local bodies to levy a development cess on all urban development within the jurisdiction of the local body based upon the capitalized value of additional income which the developer is likely to get on account of the proposed development.

Under the non-tax income of the local body, the extensive demand for various urban services and the readiness of consumer to pay an economic price for them is a rich field for raising resources. Provision of entertainment, shops and offices on commercial rents, local authority flats on centrally located public land, professional premises at market rents are various profitable propositions from which the private entrepreneur is reaping today all the benefits. There is no reason why the community cannot share some of the benefits for the good of the community as a whole.

A third and an important resource is local borrowing. Under a mistaken argument that local borrowing will take away part of the national investible capital and thus affect national development, an unnecessary, meaningless embargo has been placed on local borrowing. As mentioned earlier, the local bodies are nearly spending 750 crores per year and this is not taken into account in the national resource computation by the Planning Commission. This investment is only in the public sector. An investment of twice this amount occurs annually in private building hardly accounted for in the national capital accounting system in building of shops, factories of small scale and commercial establishments. All this does not come into the national resource computation although it is professed that it is taken into account. Local borrowing by the local bodies for purely local projects whose benefits can be experienced directly by the people of the local area will draw from sources quite beyond the resource accounting taken into the national computation and can be freely permitted. In any case money that would go into local borrowing will not be attracted by national and state borrowing. People are interested in basic

services like water, drainage, roads, etc., and not earning interest always. Therefore, there should be fuller encouragement to local borrowing for sound local development schemes. The success of such borrowing greatly depends upon the credit-worthiness of the local body and the local body would have to improve its efficiency of working and delivery of its services before it can attract good response to the loans it floats. Thus by freely allowing local bodies to borrow, a dual objective will be served—one of effecting improvements in the working of the local body and the other of enabling it to raise its resources.

The second area of management which requires an equally great attention relates to people's participation in the day-to-day management of the local body affairs as well as long term programmes for improvement of the habitat. The degree of success that is achieved by local body in its efficiency and effectiveness in bringing about improvements in the living conditions depends on three factors given below:

1. The normal day-to-day programmes of local body and their efficiency in regard to the pronounced objectives and the extent to which people of each area within the local body understand and accept these programmes and the results likely to come out of them
2. The readiness with which different sections of the population especially those who are likely to be affected will accept and identify themselves with the substantial development proposals and treat them as benefiting the entire community in spite of any adverse effect which they may have on some individuals or groups
3. The ability of the local body executive to convey factual information and the why, when and what for of its programmes to the sections of the people in the city at the grass roots level, to overcome opposition arising from ignorance and misinformation deliberately spread and the readiness with which any one in the city can approach the highest official in the executive of the local body.

No doubt many of the programmes and development proposals can be enforced with the help of the municipal laws, bye-laws, regulations, and other police powers. However, such enforcement can only be effective to the extent, people either voluntarily or out of fear conform to them. In a democratic society, where laws are framed in accordance with the wishes of the people there is always a tendency to go against those laws and hope that such action would be condoned. Too strict an enforcement of the bye-laws and regulations also tends to make the executive somewhat unpopular and misunderstood and subjected to pressures from the elected representatives of the people. It is also necessary to recognize that even in

normal maintenance programmes such as street maintenance, drainage improvement, extension of water lines, provision of electricity connections and particularly in the case of improvement schemes where private property and individuals are affected in different ways and to different extents the individual's reaction to the manner in which he is affected will vary. His support or opposition to the proposals will depend ultimately on the extent to which he appreciates the direct and indirect benefits from the proposed improvements to individuals and to the community as a whole. A proposal which apparently is adverse to his interests such as making a street one way or to disallow non-conforming activity may prove in the long run, to bring total benefits to himself and his neighbours. This understanding has to be brought about and unless this is done, most improvement will get either defeated or go unnoticed and the results are dissatisfaction on all sides.

Operationally, therefore, efficient management requires that before the programmes and improvement proposals are put into effect, the public is informed fully of the appropriateness of the proposal and the rightness of the action being taken. Such a step demands that the management should develop a continuous dialogue with the people and get them involved from the lowest level onwards in all its programmes of both maintenance and substantial improvements. People's involvement should start with neighbourhood committees where the requirements of neighbourhood are identified, priorities determined and then brought before the Mohalla Committee. It is at the Mohalla Committee level or ward committee level that programmes of the local body can be discussed in detail with people's representatives drawn from different areas of the Mohalla and also from the different sections of the population so that clear understanding of what can be undertaken and will be achieved is established. The programmes can also be explained to those involved: for instance, if a road improvement programme is being undertaken, it is necessary to explain to all the owners and tenants in the area how the programme for the proposed improvement will affect the area and what is that is required of the citizens in regard to make the programme most beneficial to them. If the people in the Mohalla dump their rubbish on the road or bring their drive-way right into the road width or plant trees in the road width then road improvement programme will not be effective and it is the citizen that would suffer ultimately. It is important that the local body officers concerned with that Mohalla should explain to the citizens of the Mohalla both at the Mohalla level and at the neighbourhood level all the schemes however small they may be, both present and future, so that some confidence is created in the minds of the people that something is being done for them. In fact advance information should be given as to what would be undertaken in terms of improvements by the local body in each area.

In regard to substantial improvement programmes it is even more

necessary to enlist the cooperation of citizens to maintain the improvement once they have been effected; for instance, the development of a small children's park in a neighbourhood has to be carefully looked after by the citizens themselves and should not be allowed to be used for playground or marriages destroying the garden. This would enable a proper use of amenities that are provided. The continuation of a nuisance or setting up of unauthorized shops or unauthorized activities can only be removed, provided there is concerted action of both the citizens and the local body officials. Effective and purposeful management of the living habitat cannot be achieved through merely enforcing of laws.

In most cases, well intended programmes have failed because the technical agency works in isolation and there is no dialogue between the people for whom these programmes are being undertaken and the officials executing the programmes. The dialogue and the outcome of those dialogues should be fully taken note of in framing the policies and the programmes at the highest level in the local body. Unfortunately the absence of such consultation and continuing contact or dialogue between different sections of the population in the different areas of the local body with the executive of the local body tends to create differences between the executive and the deliberative arms of the local body giving rise to conflicts. Since the executive wing only implements what the deliberative wing has evolved for the benefit of the community, normally the deliberative wing should have the final say; however, it is the executive wing that gets the reactions of the various sections of population and can assess these reactions technically, resourcewise and benefitwise and then feed these into the deliberative wing. The deliberative wings in most cases are likely to be pressurized by vested interests and by individuals to press for their own point of view and it is here that the deliberative wing can use the advice and assistance of the executive in overcoming undue pressures exerted by the vested interests. Thus, a greater and more intimate collaboration between the executive and the deliberative wing will make it possible to achieve better people's participation in the management of the habitat.

The local body has a job of managing the city and it can only do so by the consent of a large majority of the people and not by police power or by laws, regulations and controls. There will be no doubt some dissent but as long as such dissent is publicly exposed and the invalidity of the dissent are fully explained, the management should face no problem in mobilizing public support. Hence, people's participation at all levels should be an integral part of management and the manner in which this can be brought about effectively will differ from situation to situation and all avenues should be fully explored by the executive of the local body. In some cities in USA, they have an open house meeting to discuss the budget of the local body and this provides an occasion for anyone who has a suggestion or a criticism to come forward and voice it. In other cases

citizen's voluntary associations, community clubs, etc., undertake, on behalf of the local body, to establish these dialogues and this has proved very effective both initially and later at the implementation stage. Local bodies cannot achieve any satisfactory results unless they ensure that a majority of citizens in their area understand their programmes and react to them favourably.

It is important to emphasize in this context, that contrary to the normal attitude adopted by most executives, the local body is not giving anything to the citizens or bringing benefit to them. The citizens pay for everything they get either directly or indirectly and this attitude of benevolent benefactor must go both in the executive wing and deliberative wing of the local body. Local bodies do not create any resources or wealth. These are created by the collective effort of the citizen and he has a right to say how these resources should be applied in improving the habitat. Those who pay should be able to call the tune and the essence of habitat management is to see how this can be achieved effectively and efficiently for the benefit of the individual as well as the community.



*Environmental Factors Affecting Values of Landed Property**

R.K. WISHWAKARMA

IN GROWING metropolitan cities of India, the urban land prices have been increasing since the beginning of planned development. But more recently, the increase has been so sharp, particularly in big metropolitan cities, such as Madras, Delhi, Bombay and Calcutta¹ that it has become very difficult for the fixed income group persons to maintain even the customary levels of living at the existing levels of income. Whatever the increase in dearness allowance and annual increments in the salary one gets, it all goes to rent, i.e., about one-third or one-fourth of the salary. This could be seen from the fact that the increase in land values² has, on an average, been four-fold as against a two-fold increase in the cost of living index.³ The increase in property value results in higher rents which have risen quite high more recently probably due to monopolistic withholding of land in the hands of a few rich or institutions, who can afford to withdraw land from the market so long as they do not get sumptuous high land prices, most often resulting into skewed distribution of income

*The paper is based on the findings of a recent study conducted by the author on 'Environmental Factors Affecting Land and Property Values: A Case Study of Delhi, Centre for Urban Studies, Indian Institute of Public Administration, New Delhi, April, 1979.

¹In Madras, the minimum price of per square yard of land has increased from Rs. 80 in 1961-64 to Rs. 410 in 1969 and the maximum price from Rs. 215 to Rs. 742. For the corresponding period in Ahmedabad, the minimum price per square yard has increased from Rs. 46 to Rs. 151 and the maximum price from Rs. 210 to Rs. 400. Likewise in Delhi also the minimum price per square yard has increased from Rs. 23 in 1961-64 to Rs. 44 in 1969 and the maximum price for the corresponding period from Rs. 50 to Rs. 126—cf. Report of the Urban Land Inventory prepared by the Centre for Urban Studies (Erstwhile CMA) at the Indian Institute of Public Administration for National Building Organisation, 1971 (Typed script).

²At times in the undeveloped areas, within municipal limits, the increase has, in some cases, been to the extent of 4900 per cent—cf. *Yojana*, January, 1966, p. 56.

³Government of India, Town & Country Planning Organisation, 'Land Values in Delhi'—A Report prepared for submission to the Ministry of Home Affairs, 1970 (Mimeo).

in urban areas. However, apart from the over all increase in rents and property values, there exists a wide variation in rents from one locality to another probably due to differences in the price structure, the levels of income, diversification of land use, density pattern, levels of population growth, structural designs, etc. The economic factors such as "accessibility-space-transportation costs" and access to some of the most essential 'services' such as water supply, sewerage lines, electricity, etc., along with certain 'amenity' factors like nearness to shopping centre, availability of health, educational and recreational facilities also contribute to rents and property values differential. Keeping the above considerations in view, the paper attempts to examine how the environmental factors are affecting the land and property values in different localities on the basis of data collected for 446 households for the period 1977-78 in Delhi. Specifically, the study aims at the following objectives: (i) to explain the differentials and gaps between rental values, land values and property values, (ii) how and in relation to what environmental and 'amenity' factors did these values vary, and (iii) how these variations are useful in providing a positive basis for normative decisions.

HYPOTHESES AND VARIABLES

The property value is a function of the structural attributes of environment, the land value of the plot, and the rental value of property. There is a positive relationship between rental value and land value. Rental value increases with an increase in land value per square metre. But land value increases proportionately more than rateable value of property. High rental values are found in the localities of high income groups and in better quality environs. In view of this, it is postulated that rental and rateable property values have negative relations with increase in occupancy rate, increase in distance from residence to CBD* and to place of employment but positive relation with better amenities available in the neighbourhood, i.e., nearness to shopping centre, transportation facilities, etc.

VARIABLES

The multiplicity of 'environmental' and amenity factors are instrumental in affecting the aggregate property value. But in urban areas the residential choice is determined not by accessibility alone but rather by the environmental structure and its attributes in terms of amenities and services of the area in which the house is located.

To consider some of the favourable attributes of environmental structure in terms of occupancy rate, family income, distance from residence to

*Central Business District.

VARIABLES, FORM OF MEASURE, AND DATA BASE

<i>Variables (s)</i>	<i>Form of Measure</i>	<i>Data Base</i>
Rateable values	Mean Annual Value in Rs.	Field Survey & MCD ¹
Rental Value	Estimated mean Annual Value in Rs.	Field survey & MCD
Land Value	National market value (per sq. metre in Rs.)	Respondents and Property Dealers.
Family Income	Monthly in Rs.	Public Utilities Survey ²
Occupancy Rate	Persons living per room	Field Survey
Distance from residence to place of work	Mean access distance in Kms.	Public Utilities Survey ²
Availability of Buses for different nodal points	Total number in an hour	Public Utilities Survey ²
Distance from Residence to CBD ³	Mean access distance in Kms.	Field Survey
Shopping Centre	Mean access distance from residence in Kms.	Field Survey

¹MCD=Municipal Corporation of Delhi.

²Misra, Girish K. & K. S.R. N. Sarma, Distribution and Differential Location of Public Utilities in Urban Delhi, Indian Institute of Public Administration, 1979.

³Connaught Place is the CBD although urban Delhi has a few more nodes or sub-Central Districts.

NOTE: The Environmental factors classified on the basis of discussion in the main report are 1 to 4 as Socio-economic, 5 as physical, 6-7 as utilities and services, and 8-9 as urban amenities.

place of work, to central business district, to shopping centre and the availability of transport facilities as surrogate to urban environmental factors which affect rental and property values independently, they also work together and have their combined and complementary effects since these factors are highly correlated among each other. These important variables that deal with the economic, social and physical aspects of human environment contribute significantly in the variation of rental values, land values and rateable values. These are specified and given above with their form of measure and data base.

FUNCTIONAL FORM

In order to study the differentials in rental values, land values and property values and their reciprocals, the following two types of functions have been fitted:

$$1. Y = a + b_1 x_1 + \dots + b_n x_n$$

$$2. Y = ax^{b_1} x_1^{b_2} \dots x_n^{b_n} \quad Y = a x^{b_1} x_1^{b_2} \dots x_n^{b_n}$$

The factors which have been mentioned above are, sometimes, highly correlated. This creates problems in interpreting the results of individual coefficients due to multicollinearity of variables. Hence the regression analysis has been attempted. A matrix of zero order correlations among variable as given in Table 1 reveals that x_1 and x_2 are highly correlated. Therefore, both the variables have not been taken simultaneously for the regression analysis. There is some correlation of x_5 with x_1 x_2 otherwise there does not appear to be high correlation among the variables and therefore, it would not create any multicollinearity problem in the regression analysis.

Of the two types of functions fitted, the first is the linear function and the second is curvilinear popularly known as Cobb-Douglas function. The advantage of the latter over the former is that the regression coefficients of this model can be interpreted directly as the elasticities of each independent variable with respect to dependent variable. Secondly, this functional form also provides curvilinear shape to the curve. In the real situation, at least, the linear relationship is not expected to hold as there happens to be a limit beyond which any increase in rentals and urban land values is not expected to cross. Thirdly, it also eliminates the effect of differential size of variables used in the model.

The number of functional models and their definitions are given on pages 21-22 which measure the variation in rateable values, rental values and land values and their reciprocals and also the contribution of 'environmental' and 'amenity' factors on land and property values.

RESULTS OF EMPIRICAL FINDINGS

Relation Between Rateable Value and Rental Value

The first set of regression result involves the test of the hypothesis that assessed rateable property values are directly affected by increase in rental values and land values. The relationship between rateable value and rental value was found significant at 1 per cent level but land value has no direct relation with rateable value in model (1) of Table 2. Rental value explains 99.03 per cent variation in rateable value since by excluding land value (per square metre in rupees) there is no appreciable decrease in the explanatory power of the model (2), the adjusted coefficient of determination R^2 rather improves and becomes 99.09 per cent.

The regression coefficient in model (2) indicates that an increase in rental value of Re. 1.00 will increase the rateable value by 0.68 paise only; whereas the reciprocal of the model (2) in model (3) indicates that if (by chance) rateable value is increased by Re. 1.00, the rental value will be increased by Rs. 1.45.

TABLE I CORRELATION MATRIX

Variables	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
X_1	1.000	0.9958	0.3218	0.3106	-0.6420	-0.0426	-0.2772	-0.1918	0.4094
X_2		1.0000	0.3391	0.3506	-0.6627	-0.0099	-0.2671	-0.2147	0.4394
X_3			1.0000	0.2153	-0.1247	-0.3437	-0.3838	-0.7047	0.1736
X_4				1.0000	-0.5480	-0.2495	-0.2864	-0.0557	0.7755
X_5					1.0000	-0.4453	0.1416	-0.2038	-0.3582
X_6						1.0000	-0.0307	0.5824	0.3160
X_7							1.0000	-0.4251	-0.0770
X_8								1.0000	-0.1447
X_9									1.0000

NOTE: X_1 =Rateable value, X_2 =Rental Value, X_3 =Land value, X_4 =family income, X_5 =Occupancy rate, X_6 =distance from residence to place of work, X_7 =Availability of Buses for going out of the locality in different directions, X_8 =Distance from residence to CBD, X_9 =Distance of nearest shopping centre from residence.

REGRESSION MODELS

Linear Function	Model
$X_1 = a + b_1 y_2 + b_2 y_3$	(1)
$Y_1 = a + b y_2$	(2)
$Y_2 = a + b y_1$	(3)
$Y_2 = a + b y_3$	(4)
$Y_3 = a + b y_2$	(5)
<i>Cobb-Douglas Function</i>	
$Y_1 = a y_2^{b_1} y_3^{b_2}$	(6)
$Y_1 = a y^{b_1}$	(7)
$Y_2 = a y^{b_1}$	(8)
$Y_2 = a y^{b_3}$	(9)
$Y_3 = a y^{b_2}$	(10)

Where,

Y_1 = annual rateable value

Y_2 = annual rental value

Y_3 = land value per square metre

a = constant

MULTIPLE REGRESSION MODELS

Linear Function	Model (s)
$Y_1 = a + b_1x_2 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6$	(11)
$Y_1 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7$	(12)
$Y_2 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6$	(13)
$Y_2 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7$	(14)
$Y_3 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6$	(15)
$Y_3 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7$	(16)

Cobb-Douglas function

$$Y_1 = ax_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} \quad (17)$$

$$Y_1 = ax_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} x_7^{b_7} \quad (18)$$

$$Y_2 = ax_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} \quad (19)$$

$$Y_2 = ax_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} x_7^{b_7} \quad (20)$$

$$Y_3 = ax_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} \quad (21)$$

$$Y_3 = ax_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} x_6^{b_6} x_7^{b_7} \quad (22)$$

where,

Y_1 = annual rateable value of the property

Y_2 = annual rental value of the property

Y = land value per square metre

a = constant

x_1 = family income

x_2 = number of households per property

x_3 = occupancy rate

x_4 = distance from residence to place of work

x_5 = availability of buses in the locality for different directions

x_6 = distance from the residence to CBD

x_7 = annual rental value with respect to Y and annual land value with respect to Y_2 ; both have been used as independent variables in the model.

TABLE 2 REGRESSION CO-EFFICIENTS AND STANDARD ERRORS OF RATEABLE PROPERTY VALUE, RENTAL VALUE AND LAND VALUE UNDER LINEAR FUNCTION

Model	Constant	Reg. Coefficient		R^{-2}	R^2
		b_1	b_2		
(1)	201.85	0.6882*** (0.0208)	-0.5021 (0.8484)	.9903	.9919
(2)	-8.76	0.6840*** (0.0189)		.9909	.9916
(3)	72.60	1.4497*** (0.0402)		.9903	.9916
(4)	521.92	13.8556*** (11.5908)		.0850	.1150
(5)	419.46	0.0083** (0.0069)		.0850	.1150

NOTE: Figures in parenthesis are standard errors of regression coefficient. Figures without asteriks are not significant.

*** Significant at 1 per cent level of probability

** Significant at 5 per cent level of probability

As compared to absolute changes, proportionate⁴ changes measured in terms of elasticity as given in Table 3 indicate that the elasticity of rateable value with respect to rental value, it is 110.72 percent and the elasticity of rental value with respect to rateable value 78.48 per cent. It implies that rateable value is more elastic (more than unity) to changes in rental value than rental value (less than unity) to changes in rateable value. Both the coefficients in models (7) and (8) are significant at 1 per cent level of probability.

The above findings indicate that the propensity to change in absolute rental value happens to be more than the relative one indicating thereby that the rateable value increases at a very low rate while the rental value increases at a much higher rate. This catches the real situation of urban land and capital market in Delhi, where the strong lobbying of landlords is having full grip over the situation and the government machinery is proving ineffective in terms of partial rent control measures or in enhancing the property values; In the absence of other more flexible fiscal measures, recourse to property taxation distorts the urban land market.

⁴The partial derivative of rateable value with respect to rental value, that is $\Delta Y_1/\Delta Y_2 = 0.6840$ in model (2) is less than the partial derivative of $\Delta Y_1/\Delta Y_2 = 1.4497$ in model (3) whereas, the relative change in $\Delta Y_1/Y_1 \div \Delta Y_2/Y_2 = 1.1072$ in model (7) is greater than $\Delta Y_2/Y_2 \div \Delta Y_1/Y_1 = 0.7848$ in model (8), Where, Y_1 is annual rateable value of property and Y_2 is annual rental value of property.

TABLE 3 REGRESSION COEFFICIENTS AND STANDARD ERRORS OF RATEABLE PROPERTY VALUE, RENTAL VALUE AND LAND VALUE UNDER COBB-DOUGLAS FUNCTION

Model	Constant	Reg. Coefficient		R^{-2}	R^2
		b_1	b_2		
(6)	-1.3844	1.1088*** (0.1399)	0.0036 (0.3183)	.8427	.8689
(7)	-1.3659	1.1072*** (0.1297)		.8570	.8689
(8)	2.1567	0.7848*** (0.0919)		.8570	.8689
(9)	5.0347	0.5339 (0.6069)		.0308	.0551
(10)	5.2149	0.1031 (0.1288)		.0308	.0551

NOTE: Figures in parentheses are standard errors of regression coefficients. Figures without asteriks are not significant.

*** Significant at 1 per cent level of probability.

Relation Between Rental Value and Land Value

The results of regression of rental value on land value involves the test of the hypothesis that rents are directly affected by increases in land values per square metre. When rental value changes by Re. 1.00, the land value changes by Rs. 13.85 (model 4) and its reciprocal, *i.e.*, if land value changes by Re. 1.00, the rental value changes by less than a paise, *i.e.*, 0.0083, see model (5). Both the relations are significant at 1 and 5 per cent level of probability and only about 12 per cent variation in rental value is explained by changes in land values (Table 2). The elasticity of land value with respect to rental value is 53 per cent (model 9), whereas, its reciprocal only 10 per cent (model 10). This amounts to saying that the impact of rental values hike in urban land market is tremendous and cannot be explained in terms of rents alone or its control measures.

In view of the tremendous increase in urban land values to the extent of Rs. 13.85 for one rupee increase in rental value, the market is so tight and speculative that it accounts for a sizeable proportion of urban land market dealings through underhand transaction. Since rentals are less elastic to changes in rateable values, every bit of increase in property value proportionately leads to a more sympathetic rise in rentals through underhand transactions.

Rentals should generally reflect land and property values alike. But at times, it has been noticed that most of the properties valued at several lakhs of rupees are having rateable property value assessed for a few hundreds or thousand rupees. There is no evidence of market value

incrementals either in 'rentals' of such properties or in their 'rateable values'. In such cases, the benefits of incrementals in property values remain concealed and transacted through 'pugree'—a sort of underhand transaction leaving the public exchequer at loss. There is no reason to believe that if the urban land values are rising, this rise should not be reflected in the rental and property values.

The most interesting part of the gaps and distortions in urban land market is that the land value hikes are not reflected in rental values. The model has completely broken down not only in explaining the rental value but even when it has been tested along with other variables, it has failed to account for the variation in rental values. It is the distance function from CBD, family income and rental which are catching up the land value. This again confirms that urban market is highly imperfect. With the result, the real social, economic and institutional forces that are operating in urban land market have created a duopolistic market which has become a lucrative source of business for rich people to borrow to purchase land and to borrow against the increase in the value of land.⁵ And thus creating a cycle of enjoying continuous benefits of capital gains through incrementals in land values which remain unaccounted for by the rental values.

Contribution of Environmental and Amenity Factors

So far an attempt has been made to explain the differentials in rateable property values, rental values, and land values. But now an attempt is being made to know: (i) how and in relation to what 'environmental' and 'amenity' factors did actual land value, rental value and rateable property value vary and (ii) how this variation is useful for policy implications. To measure these relations, the multiple regression analysis has been attempted both in linear and curvilinear form and as per models their results are given in Table 4.

Rateable Values

The regression of rateable values (Y_1) on independent variables, viz., family income (X_1), occupancy rate (X_2), distance from residence to place of work (X_3), availability of buses (X_4), distance from residence to CBD (X_5), and distance from residence to shopping centre (X_6) shows that all the coefficients are significant at 1 per cent level of probability excepting the co-efficient b_3 and together they explain 91.52 per cent variation in rateable property values. The coefficient ' b_3 ' (distance to place of work) however becomes significant at 5 per cent level of probability and gives an expected sign under curvilinear model (17). It tells that for an increase in occupancy rate by one person, the rateable value will decrease by Rs. 2.31 and explains 30 per cent variation in rateable property value.

⁵Lowe, John W., "Land Speculation: Does it have Real Economic Consequences?" *Finance and Development*, Vol. XII (B), 1975, p. 32.

TABLE 4 REGRESSION COEFFICIENTS INDICATING CONTRIBUTION
STANDARD ERRORS AND INCREMENTAL CONTRIBUTIONS
LAND

<i>LINEAR FUNCTION</i>				
<i>Model No.</i>	<i>Standard Errors & Incremental Contributions</i>	<i>Constant 'a'</i>	<i>Regression Coefficient</i>	
			<i>b₁</i>	<i>b₂</i>
1	2	3	4	5
11.	Rateable value of Property	4382.81	-5.53***	-8949.17***
	Standard Errors		(1.34)	(1380.40)
	Incremental Contribution (%)		24.09	59.45
12.	Rateable Value of Property	39390.81	-5.86***	-8476.19***
	Standard Errors		(1.31)	(1376.31)
	Incremental Contribution (%)		25.92	49.22
13.	Rental Value	62889.29	-7.55***	-2791.36***
	Standard Errors		(1.89)	(1945.68)
	Incremental Contribution (%)		21.19	5.53
14.	Rental Value	56856.86	-7.99***	-12148.84***
	Standard Errors		(1.87)	(1961.01)
	Incremental Contribution (%)		22.79	47.74
15.	Land Value	781.31	0.05	-74.81
	Standard Errors		(0.10)	(105.89)
	Incremental Contribution (%)		1.66	3.27
16.	Land Value	-899.53	0.24	250.59
	Standard Errors		(0.19)	(293.70)
	Incremental Contribution (%)		22.66	10.08
<i>Cobb-Douglas Function</i>				
17.	Rateable Value of Property	11.72	-0.10	-2.31***
	Standard Errors		(0.58)	(0.66)
	Incremental Contribution (%)		00.09	30.19
18.	Rateable Value of Property	14.59	0.41*	-2.45***
	Standard Errors		(0.52)	(0.50)
	Incremental Contribution (%)		1.07	33.44
19.	Rental Value	12.34	-0.03	-1.52**
	Standard Errors		(0.42)	(0.53)
	Incremental Contribution (%)		00.01	18.56
20.	Rental Value	14.41	0.34	-1.62***
	Standard Errors		(0.45)	(0.48)
	Incremental Contribution (%)		1.06	20.77
21.	Land Value	2.57	0.46*	-12.98
	Standard Errors		(0.30)	(38.16)
	Incremental Contribution (%)		13.55	00.69
22.	Land Value	7.62	0.45*	-0.75
	Standard Errors		(0.27)	(0.52)
	Incremental Contribution (%)		12.90	9.98

*** Significant at 1 per cent level of probability.

** Significant at 5 per cent level of probability.

* Significant at 10 per cent level of probability.

OF EACH ENVIRONMENTAL AND AMENITY FACTOR, THEIR
TO RATEABLE PROPERTY VALUE, RENTAL VALUE AND
VALUE

Regression Coefficients					Coefficients of Determination (Percentage)	
b_3	b_4	b_5	b_6	b_7	Total	Adjusted
6	7	8	9	10	11	12
-654.85 (425.56)	-396.86*** (276.61)	-464.17** (243.43)	14163.80*** (3814.98)		91.51	83.03
3.35	15.79	5.15	19.50			
-601.40* (409.96)	-982.03*** (270.97)	300.11 (268.13)	14751.48*** (3685.27)	6.32 (5.09)	93.51	84.43
2.78	17.05	1.62	20.78	1.99		
-681.24 (599.83)	1328.82*** (385.65)	811.80** (345.15)	19337.24*** (5377.16)		92.05	84.09
1.70	15.75	7.41	17.15			
608.65 (584.12)	-1444.53*** (386.08)	-588.22 (382.05)	20135.68*** (5250.87)	8.59 (7.26)	93.78	85.08
1.34	17.41	2.95	18.24	1.74		
-8.45 (32.64)	13.47 (20.98)	-25.94 (18.67)	-92.95 (292.64)		60.67	21.33
00.43	2.70	12.65	00.67			
8.87 (34.84)	47.27 (35.07)	-5.31 (25.13)	-584.87 (503.41)	0.025 (0.021)	69.26	26.22
00.89	25.13	00.61	18.67	19.36		
-1.49*** (0.59)	0.89 (0.79)	-0.08 (0.33)	0.78** (0.36)		84.91	69.81
15.89	3.15	00.15	11.56			
-1.30* (0.51)	1.12* (0.67)	-0.53 (0.67)	0.56* (0.36)	1.11* (0.59)	91.08	78.58
11.59	4.81	3.65	5.10	6.16		
-0.48 (0.47)	-0.21 (0.63)	-0.34 (0.26)	0.61** (0.29)		85.25	72.47
2.37	00.25	3.80	68.85			
0.35 (0.43)	0.04* (0.58)	0.66* (0.31)	0.45 (0.28)	0.80* (0.51)	90.76	77.82
1.16	00.01	8.21	4.60			
0.17 (0.34)	0.20 (0.45)	-0.40* (0.19)	-0.20 (0.20)		63.74	27.49
1.54	1.21	26.75	5.58			
-0.03 (0.33)	0.12 (0.41)	-0.54* (0.19)	0.05 (0.24)	-0.41* (0.26)	75.66	41.58
00.02	00.41	38.24	00.18	11.90		

In the analysis, the regression coefficients of different environmental factors with respect to rateable value indicate that there is a significant negative relation between distance from residence to CBD and of occupancy rate with the rateable value and both account for about 65 per cent variation in the total contribution of the explanatory variables. But family income gives an unexpected significant negative sign. The inverse relation between family income and property value is perhaps due to non-reliability of income data. With the result, the observed relationship between environmental quality of the locality and property value subsumes, both 'family income' as well as 'income effect' of quality change. This is in consonance with the general conclusion drawn by Nourse⁶ in his analysis of the effect of air pollution on house values.

Availability of buses gives an expected sign but not significant under curvilinear model. It tells us that if a single unit of bus service is added in the service of the locality, the property value gets enhanced by 89 paise. This is perhaps due to the inclusion of single measure of accessibility in the study which seems to have given possibly a weak relation due to multiple accessibility measures such as the use of private vehicles (scooters, cars, trains, cycles, etc.) and less dependence on public transport chosen as an independent variable for the study. Or there is a possibility of a relatively better public transportation facilities organized in the localities having low property values.

Distance plays a very important role in studies of relative property values concerning many theories of residential location. If distance from residence to Central Business District (CBD) increased by 1 km., property value decreases by Rs. 464 and accounts for 5.15 per cent variation. Similarly, if distance from residence to shopping centre increases by 1 km., rateable value changes by 0.78 paise contributing 11.56 per cent variation in the property value under curvilinear model and 19.50 per cent under linear model. An interesting significant positive relationship between rateable value and distance of shopping centre from residence indicates the desirability of certain minimum distance between shopping centre and residential neighbourhood. Whether this is by way of natural selection or a deliberate action of the planners in the placement of activities, it is difficult to say. But this is an important lesson and guideline for planners in the placement of activities.

Both the models (11) and (17), are good fit and significant at 1 per cent level of probability with a total contribution of explanatory variables R^2 of 91.51 per cent in the variation of rateable value (under linear model) and 84.91 per cent (under curvilinear model).

The introduction of land value per square metre as one of the indepen-

⁶Nourse, H.O. The Effect of Air Pollution on the House Values, "*Land Economics*, Vol. L3, 1967, pp. 181-89,

dent variables (X_7) in the model (12) improves the explanatory power of the model R^2 to 93.51 per cent but its marginal contribution is less than two per cent and even it is not significant. Though the regression coefficient becomes significant at 10 per cent level of probability with negative sign under Cobb-Douglas model (18) it implies that if the land value per square metre increases by rupee one, the rateable value decreases by Rs. 1.11 with a marginal contribution of 6.16 per cent in rateable value. This indicates the real market situation where land value has no impact on incrementals in rateable property values which remains unreflected in the real world of urban land market. This is quite evident from the negative elasticity of land value with respect to rateable value which is more than 111 per cent.

The family income gives an expected significant sign in this model and indicates that for every unit (by rupee one) increase in family income, rental value increases by 40 paise with an elasticity of 40.91 per cent with respect to family income.

Rental Value and Environmental Factors

The impact of environmental factors on rental value is more sensitive and the contribution of each environmental factors (X_1 to X_6) is similar to that of rateable value but it slightly improves the explanatory power of the models (13) and (19). All the coefficients are significant at 1 per cent level of probability except b_5 which is significant only at 5 per cent level. The marginal contribution of distance from residence to CBD (b_6) has increased. It explains 7.41 per cent variation in rental value for a unit change in distance by 1 kilometer. Occupancy rate is more catchy about rental value and accounts for 57 per cent variation. An increase in occupancy rate not only minimises the per capita availability of civic services with more pent up demand but at the same time decreases the rental value of property. This adversely affects the quality of environment, since with respect to rental value, both occupancy rate and distance to shopping centre are significantly elastic, *i.e.*, 152 per cent and about 61 per cent, respectively. Other variables are not showing significant elasticities indicating thereby that the other environmental factors are not contributing to rental value in the specified model.

By introducing land value in rupees per square metre, the explanatory power of the model R^2 further improves and accounts for 93.78 per cent variation in rental value with an adjusted coefficient of determination R^{-2} of 85.08 per cent (Table 4). We may recall that when land value was regressed on rental value in model (5), it indicated that for one rupee incremental in land value, rental value increased by less than a paise. But in model (14) when rental value has been regressed alongwith other environmental factors, the regression coefficient of rental value with respect to land value gives an expected but non-significant sign. However, this

coefficient also becomes significant at 10 per cent level of probability under curvilinear function. This indicates that for a rupee change in land value per square metre, rental value changes by 80 paise with a marginal contribution of 4.52 per cent in the variation of rental value. Since it is not the market rental value but the actual rent being paid or estimated for the property, it does not account for true market rent which carries with it every bit of a sympathetic rise in land value. And this is the reason that the sign has become negative.

Land Value and Environmental Factors

The regression of land value on the aforesaid X_1 to X_6 environmental factors to measure their contribution in the total variation of land value under model (15) shows that none of the coefficients are significant but each coefficient is giving an expected sign. This indicates that these factors are much more relevant for the study of land values and to comprehend all the factors both specified and unspecified. But under curvilinear model (21), the expected sign of the coefficients of family income and the centrality of the node (CBD) both become significant at 10 per cent level of probability. For a rupee change in the family income, land value per square metre changes by 45 paise and if distance from the residence to CBD increased by one kilometer, the land value per square metre changes by 20 paise. Both these factors account for about 40 per cent variation in land values in the model. The results are in conformity with the existing theories and their empirical contents.

The regression of land value along with rental value as an additional factor (X_7) in the model (22) increases the importance of the centrality of the node (CBD) as one of the explanatory variable in explaining the variation of land values from a marginal contribution of 26.75 per cent to 38.24 per cent. For one kilometer increase in distance from CBD, the land value per square metre decreases by 54 paise with a marginal contribution of 38 per cent. The coefficient is significant at 10 per cent level of probability and R^2 explains 75.66 per cent variation in land values. These results are consistent with my earlier findings of land values in Delhi (1972) where CBD accounted for 35 per cent variation in land value under linear model and 44 per cent under curvilinear model.⁷

Analysis of Elasticity

Elasticity estimates resulting from the Cobb-Douglas function as given in models 17 to 22 indicate that the occupancy rate and distance to shopping centre have significant elasticities with respect to both annual rateable value and rental value. With rateable value, the negative elasticity of occu-

⁷Wishwakarma, R.K., *Land Values in Delhi: An Analysis of Spatial Variations and Trends*, op. cit., pp. 39-40.

ancy rate varies from 230 per cent to 245 per cent and of distance to shopping centre from 60 to 78 per cent with positive signs.

The introduction of land value per square metre as one of the independent variables changes the elasticities of both rateable value and rental value very significantly. With rental value, negative elasticity of occupancy rate varies from 152 to 162 per cent and of distance to shopping centre from 56 to 70 per cent. By introducing land value per square metre as an explanatory variable in the model, the coefficient of elasticities for amenities like the availability of buses from the locality for different directions and distance to CBD also become marginally significant with elasticity coefficients at 4 and 66 per cent respectively.

Residuals

The deviations of the observed from the predicted (fitted) values resulting from the amount of Y that have not been explained by the specified regression models for each individual locality under study are presented in Tables 5 and 6. The predicted values of annual rental value, rateable value and land value per square metre, all measured in terms of rupees and their percentage deviation, show the values that ought to have been there in accordance with the stipulated relationships with explanatory variables. The residuals thus tell us the nature and extent to which each locality with respect to rateable property value, rental value and land value per square metre deviates from the expected value. A positive or negative residual thus suggests that the locality is relatively over-estimated or under-estimated with respect to the observed values of the dependent variable. In other words, whether or not, the individual localities conform to the regression line in terms of their rateable value, rental value and land value.

Rental Value

In analysing the results of residuals, if one considers the deviation of 10 per cent as 'normal' phenomenon, the localities like Moti Nagar, Old Rajendra Nagar, Kalkaji, Outram Lines in model (2) of Table 5 indicate negative signs of marginal deviations which estimate the residuals of rental value not accounted for the purposes of assessment of rateable value. Thus it represents the estimated gap between the observed value and regressed value. Likewise, there are also colonies like Basti Harfool Singh, Ganj Mir Khan, Janakpuri and Arya Pura which show positive signs of marginal deviation.

Rateable Value

Residuals of rateable value on rental value as given in model (3) of Table 5 indicate the amount of rateable value that has not been explained by rental value, and thus, it may be treated as the marginal deviation in the direction of over and under assessment of rateable property values. In

TABLE 5 VALUES OF RESIDUALS FOR EACH LOCALITY

Sl. No.	Name of the Locality	Residuals of Linear Regression Models of			
		Y_1 on Y_2	Y_2 on Y_1	Y_3 on Y_2	Y_1 on Y_2 & Y_3
1.	Moti Nagar	-174.25 (16.75)	207.69 (11.61)	15.70 (3.48)	-166.37 (15.99)
2.	Basti Harfool Singh	231.09 (12.13)	-374.32 (15.21)	-460.13 (51.12)	462.13 (24.25)
3.	Janak Puri	705.55 (10.17)	-1006.43 (11.03)	-195.14 (65.04)	607.57 (8.76)
4.	Baird Road	321.44 (1.77)	-308.19 (1.18)	114.66 (15.28)	379.02 (2.09)
5.	Ganj Mir Khan	215.75 (15.08)	-357.70 (20.00)	-34.30 (8.57)	198.53 (13.88)
6.	Old Rajendra Nagar	-745.83 (28.03)	1063.14 (21.29)	39.12 (7.82)	-726.19 (27.30)
7.	Outram Lines	-604.59 (403.06)	825.94 (74.00)	-128.72 (42.90)	-669.23 (446.15)
8.	Arya Pura	37.07 (7.00)	-107.50 (14.68)	274.46 (39.20)	174.88 (33.05)
9.	Civil Lines	-650.68 (10.14)	969.98 (9.37)	19.71 (3.78)	-640.78 (9.98)
10.	Kalkaji	-340.14 (14.36)	406.46 (11.74)	-2.42 (0.53)	-341.35 (14.41)
11.	Vasant Vihar	-242.27 (1.40)	505.53 (1.97)	-56.85 (9.88)	-270.82 (1.56)
12.	East Rohtas Nagar	66.84 (3.73)	-135.60 (5.35)	-265.47 (151.69)	-67.46 (3.71)
13.	Sadar Cantt. (Delhi-Cantt.)	1180.01 (40.19)	-1748.99 (67.79)	-240.87 (12.403)	1059.06 (36.07)
Models		(2)	(3)	(5)	(1)

NOTE: 1. Residuals indicate the difference between the observed and the expected values of the dependent variable.

2. Figures in parenthesis indicate percentage.

3. Figures without parenthesis indicate amount in rupees.

Y_1 = Average annual rateable value;

Y_2 = Average annual rental value; and

Y_3 = Average (notional) land value per square metre.

TABLE 6 VALUES OF RESIDUALS FOR EACH LOCALITY

Sl. No.	Name of the Locality	Residuals of Regression (Cobb-Douglas)			
		Y_1 on Y_2	Y_2 on Y_1	Y_3 on Y_2	Y_1 on Y_2 & Y_3
1.	Moti Nagar	21.84 (2.09)	-227.35 (-12.71)	51.72 (11.48)	21.40 (2.05)
2.	Basti Harfool Singh	455.43 (23.90)	-780.70 (-31.73)	488.40 (54.26)	451.39 (23.69)
3.	Janak Puri	750.58 (10.82)	186.57 (2.04)	-171.15 (-57.04)	760.51 (10.96)
4.	Baird Road	-1631.92 (-9.01)	7043.14 (27.07)	225.07 (30.00)	-1657.00 (-9.15)
5.	Ganj Mir Khan	411.84 (28.79)	-799.54 (-44.71)	1.72 (0.43)	411.82 (28.79)
6.	Old Rajendra Nagar	-513.39 (-19.30)	780.65 (15.63)	57.24 (11.44)	-514.76 (-19.35)
7.	Outram Lines	-454.18 (-302.78)	675.04 (60.48)	-79.38 (-26.45)	-453.68 (-302.45)
8.	Arya Pura	150.22 (28.39)	-453.65 (-61.97)	336.77 (47.10)	149.34 (28.23)
9.	Civil Lines	-693.77 (-10.81)	1939.60 (18.75)	48.70 (9.08)	-696.18 (-10.85)
10.	Kalkaji	-95.86 (-4.04)	127.95 (3.22)	17.56 (3.90)	-96.21 (-4.06)
11.	Vasant Vihar	2130.37 (-12.34)	7326.49 (28.62)	50.95 (8.86)	-2136.77 (-12.38)
12.	East Rohtas Nagar	293.39 (16.39)	-554.15 (-21.88)	-237.82 (-135.89)	297.95 (16.64)
13.	Sadar Cantt. (Delhi-Cantonment)	1407.94 (47.95)	-1970.59 (-76.37)	-213.62 (-106.81)	1411.89 (48.08)
Models		(7)	(8)	(10)	(6)

NOTE : 1. Residuals indicate the difference between the observed and the expected values of the dependent variable.

2. Figures in parenthesis indicate percentage.

3. Figures without parenthesis indicate amount in rupees.

Y_1 = Average annual rateable value;

Y_2 = Average annual rental value; and

Y_3 = Average (notional) land value per square metre.

each case, localities like Moti Nagar, Old Rajendra Nagar and Kalkaji are marginally underassessed; whereas Basti Harfool Singh, Ganj Mir Khan, Outram Lines, Arya Pura, Sadar Cantt., etc., are over assessed which indicates the impact of rental value of commercial properties on the rateable value of residential properties due to proximity with centre of trade and commerce or business complex.

Property Value

Residuals of rent and land value taken together as measures of property value in model (6) of Table 5 indicate the residuals on both positive and negative side which show the extent to which property value deviates from the average regression line with respect to rateable value.

Corresponding residuals estimated by fitting the Cobb-Douglas function are given under model (6), (7), (8) and (10) in Table 6.

Residuals with Environmental Factors

The observed and predicted values of rateable values, rental values and land values when regressed alongwith other environmental services and amenities, the residuals of all the functions fitted are given in Tables 7, 8, 9, for linear function and Tables 10, 11 and 12 for curvilinear functions. The residuals under each model indicate the possible gaps (both positive and negative) in the observed and estimated rental value, rateable value and land value with respect to the specified environmental and amenity factors of each locality.

On the basis of the regression analysis, it is possible to have an idea of localities which are accountable more in terms of the objective factors of environmental quality which contribute significantly in the variation of rental values, rateable property values, and land values but the residual analysis tells us the reciprocal of it, *i.e.*, the amount of dependent variable that have not been explained by the factor (s) fitted in the specified regression models.

CONCLUSIONS AND POLICY IMPLICATIONS

The results strongly support that the property value is determined by the environmental quality of specific locations loaded with 'services' and 'amenities' in general and considerations of 'accessibility-space-transportation' costs in particular. The success of land value model helped confirm the theoretical account and the contribution of the factors under consideration more than rental and rateable property value models. The implications of the alternative models suggest that it is the land value which gives much expected hypothesized relations with significant signs. The residential choice in terms of environmental quality including housing characteristics

TABLE 7 VALUES OF RESIDUALS FOR EACH LOCALITY—RATEABLE VALUE WITH RESPECT TO ENVIRONMENTAL FACTORS

Sl. No.	Name of the Locality	Residuals of	
		$X_1, X_2, X_3, X_4, X_5 \text{ \& } X_6 \text{ on } Y_1$	$X_1, X_2, X_3, X_4, X_5, X_6 \text{ \& } X_7 \text{ on } Y_1$
1.	Moti Nagar	—2217.19 —(213.19)	—2434.98 —(234.13)
2.	Basti Harfool Singh	3282.74 (172.32)	1944.23 (102.05)
3.	Janak Puri	1612.61 (23.25)	1094.23 (15.77)
4.	Baird Road	2146.63 (11.85)	1679.85 (9.27)
5.	Ganj Mir Khan	—2552.91 —(178.52)	—1270.06 —(88.81)
6.	Old Rajendra Nagar	135.30 (5.08)	1079.58 (40.58)
7.	Outram Lines	1486.81 (991.20)	1033.48 (688.98)
8.	Arya Pura	—1993.21 —(376.78)	—3076.11 —(581.49)
9.	Civil Lines	—767.99 —(11.96)	—503.68 —(7.85)
10.	Kalkaji	—61.75 (2.60)	—137.41 —(5.80)
11.	Vasant Vihar	—388.57 —(2.25)	—546.21 —(3.16)
12.	East Rohtas Nagar	—790.13 —(44.14)	414.07 (39.89)
13.	Sadar Cantt. (Delhi-Cantt.)	107.70 (3.66)	423.04 (14.40)
Models		(11)	(12)

NOTE : 1. The residuals indicate the differences between the observed and predicted values of the dependent variable (Rateable value) from the respective Linear regression models.

2. Figures in parenthesis indicate percentages and other indicate amount in rupees.

TABLE 8 VALUES OF RESIDUALS FOR EACH LOCALITY—RENTAL VALUE WITH RESPECT TO ENVIRONMENTAL FACTORS

Sl. No.	Name of the Locality	Residuals of	
		$X_1, X_2, X_3, X_4, X_5, X_6, X_7, \text{ on } X_1$	$X_1, X_2, X_3, X_4, X_5, X_6, X_7 \text{ on } Y_1$
1.	Moti Nagar	-3102.12 -(173.49)	-2806.26 -(156.94)
2.	Basti Harfool Singh	2398.72 (97.50)	4217.04 (171.42)
3.	Janak Puri	537.36 (5.89)	1241.56 (13.61)
4.	Baird Road	2412.37 (9.27)	3046.48 (11.71)
5.	Ganj Mir Khan	-2552.87 -(142.77)	-4295.57 -(240.24)
6.	Old Rajendra Nagar	1875.58 (37.57)	592.81 (11.87)
7.	Outram Lines	2071.16 (185.58)	2687.00 (240.77)
8.	Arya Pura	-4359.98 -(595.62)	-2888.89 -(394.65)
9.	Civil Lines	-860.40 -(8.31)	-1219.46 -(11.78)
10.	Kalkaji	445.35 (11.21)	548.12 (13.79)
11.	Vasant Vihar	-444.24 -(1.73)	-230.10 -(0.89)
12.	East Rohtas Nagar	1139.32 (44.99)	-904.09 -(35.70)
13.	Sadar Cantt. (Delhi-Cantt.)	439.77 (17.04)	11.39 (0.44)
	(Model)	(14)	(13)

NOTE : 1. The residuals indicate the differences between the observed and predicted values of the dependent variable (Rental value) from the respective equations of linear regression models.

2. Figures in parenthesis indicate percentages and other indicate amount in rupees.

TABLE 9 VALUES OF RESIDUALS FOR EACH LOCALITY--LAND VALUE
WITH RESPECT TO ENVIRONMENTAL FACTORS

Sl. No.	Name of the Locality	Residuals of	
		$X_1, X_2, X_3, X_4,$ $X_5, X_6, X_7, \text{ on } X_3$	$X_1, X_2, X_3, X_4,$ $X_5, X_6, \text{ on } Y_3$
1.	Moti Nagar	105.84 (23.51)	34.45 (7.65)
2.	Basti Harfool Singh	104.43 (11.60)	211.71 (23.52)
3.	Janak Puri	50.41 (16.80)	81.99 (27.32)
4.	Baird Road	-3.67 (-0.48)	73.83 (9.84)
5.	Ganj Mir Khan	-93.63 (-23.40)	-202.90 (-50.72)
6.	Old Rajendra Nagar	-164.43 (-32.88)	-149.35 (-29.87)
7.	Outram Lines	3.48 (1.11)	71.70 (23.90)
8.	Arya Pura	144.77 (34.96)	171.28 (24.46)
9.	Civil Lines	-10.78 (-2.08)	-41.80 (-7.96)
10.	Kalkaji	-1.98 (-0.43)	11.97 (2.65)
11.	Vasant Vihar	30.79 (5.25)	24.93 (4.39)
12.	East Rohtas Nagar	-214.92 (-122.80)	-237.91 (-135.95)
13.	Sadar Cantt. (Delhi-Cantonment)	-50.17 (-25.08)	-49.88 (-24.93)
(Model)		(16)	(15)

NOTE : 1 The residuals indicate the differences between the observed and predicted values of the dependent variable (Land value per square metre) from the respective equations of linear regression models.

2. Figures in parenthesis indicate percentages and others indicate amount in rupees.

TABLE 10 VALUES OF RESIDUALS FOR EACH LOCALITY—RATEABLE VALUE WITH RESPECT TO ENVIRONMENTAL FACTORS

Sl. No.	Name of the Locality	Residuals of	
		$x_1, x_2, x_3, x_4, x_5, x_6$ & x_7 , on y_1	$x_1, x_2, x_3, x_4, x_5,$ & x_6 , on y_1
1.	Moti Nagar	-423.50 -(40.72)	-1161.33 -(111.66)
2.	Basti Harfool Singh	-(45.72) -(2.39)	-588.18 -(30.87)
3.	Janak Puri	4493.94 (64.80)	4771.59 (67.80)
4.	Baird Road	4450.08 (24.57)	3864.86 (21.34)
5.	Ganj Mir Khan	-197.64 -(13.82)	293.21 (20.50)
6.	Old Rajendra Nagar	237.39 (8.92)	915.72 (34.42)
7.	Outram Lines	-34.25 -(22.83)	-66.98 -(44.65)
8.	Arya Pura	30.02 (5.67)	-356.45 -(67.38)
9.	Civil Lines	-475.63 -(7.41)	189.75 (2.95)
10.	Kalkaji	-(6.81)	-(22.57)
11.	Vasant Vihar	-8379.77 -(48.55)	-11813.03 -(68.45)
12.	East Rohtas Nagar	-1259.78 -(70.37)	175.06 (9.77)
13.	Sadar Cantt. (Delhi-Cantonment)	735.68	1043.05 (35.52)
(Models)		(18)	(17)

NOTE: 1. The residuals indicate the differences between the observed and predicted values of the dependent variable (Rateable value) from the respective Cobb-Douglas Regression models.

2. Figures in parenthesis indicate percentages and others indicate amount in rupees.

TABLE 11 VALUES OF RESIDUALS FOR EACH LOCALITY—RENTAL
VALUE WITH RESPECT TO ENVIRONMENTAL FACTORS

Sl. No.	Name of the Locality	Residuals of	
		$x_1, x_2, x_3, x_4, x_5, x_6,$ & x_7, y_2	$x_1, x_2, x_3, x_4, x_5,$ & $x_6, \text{ on } y_2$
1.	Moti Nagar	—652.76 —(36.50)	—1488.20 —(83.23)
2.	Basti Harfool Singh	321.45 (13.06)	—92.47 —(3.75)
3.	Janak Puri	4282.79 (46.96)	4686.15 (51.31)
4.	Baird Road	7630.95 (29.33)	7066.17 (27.16)
5.	Ganj Mir Khan	—1018.13 —(54.94)	—378.24 —(21.15)
6.	Old Rajendra Nagar	1347.69 (26.99)	2116.33 (42.39)
7.	Outram Lines	129.37 (11.59)	5.92 (0.53)
8.	Arya Pura	—214.25 —(29.26)	—698.93 —(95.48)
9.	Civil Lines	—3775.14 —(36.49)	—2778.26 —(26.85)
10.	Kalkaji	587.75 (14.79)	234.51 (5.90)
11.	Vasant Vihar	—7060.99 —(27.58)	—10158.89 —(39.68)
12.	East Rohtas Nagar	—1124.71 —(44.41)	220.01 (8.68)
13.	Sadar Cantt. (Delhi-cantonment)	512.81 (19.87)	725.36 (28.11)
	(Model)	(20)	(19)

NOTE: 1. The residuals indicate the differences between the observed and predicted values of the dependent variable (Rental value) from the respective Cobb-Douglas Regression models.

2. Figures in parenthesis indicate percentage and others indicate amount in rupees.

TABLE 12 VALUES OF RESIDUALS FOR EACH LOCALITY—LAND VALUE WITH RESPECT TO ENVIRONMENTAL FACTORS

Sl. No.	Name of the Locality	Residuals of	
		$x_1, x_2, x_3, x_4, x_5, x_6, \& x_7, \text{ on } y_3$	$x_1, x_2, x_3, x_4, x_5, x_6, \text{ on } y_3$
1.	Moti Nagar	50.33 (11.18)	137.98 (30.66)
2.	Basti Harfool Singh	166.82 (18.53)	177.80 (19.75)
3.	Janak Puri	51.06 (17.01)	—34.32 (—11.43)
4.	Baird Road	115.48 (—15.39)	27.70 (3.69)
5.	Ganj Mir Khan	—196.98 (—49.24)	—151.93 (—37.98)
6.	Old Rajendra Nagar	—35.81 (—7.16)	—171.34 (—34.26)
7.	Outram Lines	41.48 (13.82)	40.92 (13.64)
8.	Arya Pura	149.59 (21.36)	281.53 (40.21)
9.	Civil Lines	—108.81 (—20.72)	—50.06 (—9.53)
10.	Kalkaji	62.06 (13.79)	52.28 (11.61)
11.	Vasant Vihar	—13.92 (—2.42)	62.30 (10.66)
12.	East Rohtas Nagar	—123.25 (—70.42)	—134.54 (—76.87)
13.	Sadar Cantt. (Delhi-Cantonment)	0.00 (0.00)	—28.90 (—14.45)
Models		(22)	(21)

NOTE: 1. The residuals indicate the differences between the observed and predicted values of the dependent variable (Land Value) from the respective Cobb-Douglas Regression models.

2. Figures in parenthesis indicate percentages and other indicate amount in rupees,

is much more complex decision which call for a behaviourist theory and socio-economic data on household income and expenditure pattern at micro-level. Some of the conclusions drawn are summarised below:

The propensity to change in rental value is more than rateable value although both change significantly with respect to each other. Since rentals are less elastic to changes in rateable values, every bit of increase in property value proportionately leads to a more sympathetic rise in rental value. If tapped, it might become an additional source of revenue for augmentation of the financial health of the corporation.

The market land value is not reflected in the assessed rental value because it is not the market rent but the actual rent being paid by the tenants. The rental value thus accounts for only 12 per cent variation in land value and a sizeable proportion of incremental in rental value remains concealed in terms of underquotation of rental value or is transacted through pugree (a sort of underhand transaction) leaving the public exchequer at loss. It shows great imperfection in the urban land market of Delhi where the partial rent control and other measures like development and disposal of land and built-up flats by Delhi Development Authority have failed to control and regulate the urban land market.

Land value is the capitalized value of land and rental value is a certain percentage of the capital value. Then there is no reason to believe that the rateable value should not keep pace with the rising rental value, when the overall land and property values are showing an increasing trend. Since rateable value fails to keep pace with rising rents, it suggests for the valuation of property on 'capital' value basis rather than on 'rental' value basis.

Measuring the contribution of 'environmental' and 'amenity factors, the study indicates the desirability of a certain minimum distance in the planning of residential neighbourhood and shopping centres.

Since the growth multiplier of land values is greater than that of rental values, it is likely to induce pressures for economy in land-use which gets reflected in the increased density of capital and more properties per unit of space and thereby increasing the efficiency of space. This further creates scope for appraisal of appropriation rates, in terms of the net rent received by landlords divided by the total economic rent of the land or building property.

However, the findings of this study make a case for some of more important variables and quantify their contributions which have direct bearing on decision making process and policies relating to rentals, land and rateable property values, urban land control measures, housing policies including residential locations and planning of activities for a more humane environment.

A very sensible model could be constructed if a comprehensive study is designed and conducted at a larger plane with sufficient number of environ-

mental factors to account for other factors such as land speculation, boom psychology, inflationary trends, slow pace of development, increasing pressure of housing demand both national and international, market rent alongwith the quality of environment, pattern of income distribution, pattern of land-use and economic activity.



Design for Human Settlements

ADITYA PRAKASH

I HAVE BEEN given to think through my education and upbringing, that the job of an architect is to design a building or a space according to a given set of requirements. I believe most architects still think so. At any rate, the education of an architect in the various schools of architecture in the country is conducted on these criteria for the profession. The code of conduct and the scale of professional charges for the architects are also based on the same job requirements.

I think so no more. Indeed, I think, that most of the troubles of the 'DESIGN FOR HUMAN SETTLEMENTS' arise from this limited thinking regarding the job of an architect. The reason is that we think of human settlements in isolation. We say that we require:

- (a) Houses — Good looking, well built, well lighted and ventilated;
- (b) Services — Water supply, drainage, electricity, telephones;
- (c) Amenities — Health, education, social, shopping; and
- (d) Movement — Transport network and roads to get to places of work, recreation and shopping.

If you can get all these in a place designed by an architect, what more can you expect? This is all one expects, and this is all one hopes to provide within budget. There can be no basic quarrel with this statement?

Yet some basic questions do arise? Why does a person build a house? How does he find money for it? What does a person expect from a house?

About 30 years ago, Corbusier said, "House is a machine for living in". This answers for most people the questions why does a person build, and what he expects from a house. How does a person find money is another matter. This question is not considered relevant, (in fact considered ridiculous) because, one would say, that obviously the money has to be found, just as money has to be found for food, and clothing, and cosmetics. To build a house, one should save, or raise loan and pay later!

House in our imagination is essentially a CONSUMER item like other household goods, "House is a machine for living in".

But this was not always so. House was a 'generator' of resources. House was a producer of wealth also.

If one rears milch cattle, or draft animals in the house, if one has a smithery or a carpentry shop, or a spinning spindle and weaving loom in the house, then side by side with living one is generating resources, or producing wealth. If one is training ones progeny in the family vocation in the house, then one is using the house as a school.

All this was pre-industrial system. No one differentiated between living and working, and recreation. They were all functions of the same human being performed simultaneously. Singing while working, teaching while ploughing, relaxing while spinning—all was done side by side.

Come the industrial revolution or the age of science, every human activity is placed in separate compartment. Go to factory for work, or earning a livelihood, come home to live, go to school to study, to cinema to enjoy, to shops to buy and sell, to hospital for a cure.

It tends to suggest a well organized society accomplishing division of labour and efficiency—like a machine. What is wrong with it?

The wrong is that differentiation has gone too far and we are heading towards more and more differentiation or specialization? We are becoming too much dependent on factors beyond our control? Our lives are becoming more and more vulnerable?

A system of growth of human settlements is self defeating:

1. If most of the people living are not able to generate enough surplus wealth with which to build and maintain the place of residence. Such a situation makes the creation of slums inevitable.
2. If the system of the production and distribution of wealth is such that most people live at or below subsistence level. This also makes the growth of slums inevitable.
3. If most people have, for survival, to spend more and more of their time wastefully, *i.e.*, travelling, and waiting in queues, etc., rather than productively. (This makes the possibility of some additional productive employment more and more difficult).
4. If the system of consumption is wasteful, *i.e.*, that which is taken out or grown from nature (like minerals, water, air, vegetables, etc.) is disposed off in such a manner that it does not replenish the original source. (This makes survival more and more difficult).
5. If the basic requirements of survival, *i.e.*, AIR, WATER, FOOD tend to become polluted or contaminated. (As seems to be happening these days).
6. If the unpleasant or obnoxious in the production systems and disposal systems, ends to be relegated to handling by deprived citizens away from the normal settlements, and no effort is made to transform the unpleasant and obnoxious into acceptable human works.

(This is actually the way the industry and sewage disposal, etc., are treated in our society).

7. If the utilization of technology is such that it inhibits the possibility of self-employment (now-a-days more and more people are seeking jobs for some other employer, mainly government and factories).
8. If more and more transport mechanisms have to be put into operation (e.g., trucks, bus services, underground railways) for keeping the people moving for essential work, and keeping the supply lines running. (Every road or railway line reaches a saturation point after some time, beyond which it becomes impossible to function, for example, a road cannot be widened indefinitely to cope with growing traffic).
9. If the essential services, *i.e.*, water supply, drainage, waste disposal, and electricity are provided in such a manner that with the growth of settlements the load on services increases beyond augmentation possibilities. (This is actually happening in practically all cities, because of centralization).
10. If the essential amenities like education, health care, community welfare are loaded beyond possibilities of augmentation. (This is evident from lack of hospital beds, and seats in educational institutions).
11. If the dependence on mechanical means tends to become so much that any break down throws life completely out of gear. (This happens when the electric supply is cut off).
12. If for keeping the services working the controls tend to become more and more centralized and distant (e.g., for supply of contaminated water it is difficult to find out as to who will remove the fault).

This list can be enlarged by anybody from personal experience. The crux of the problem is that as long as a system is working satisfactorily everyone thinks it to be ideal but as soon as there is a break down, then one feels bewildered. One does not know what to do if the air is polluted, water is contaminated, sewer is choked, road is blocked, admission is not available in schools, there are interminable queues at bus stops, houses are not available, etc.

All this is because of faulty planning of the human settlements, because of not anticipating what is the likely outcome of the systems of growth adopted, because of differentiated planning, *i.e.*, everyone planning according to the requirements in his own field of specialization, and there being no agency to coordinate all the planning and growth. For example, a housing planner finds out the shortage of housing, existence of slums, and the trends of growth in housing requirements, and frames a scheme for providing the housing. This means, financial requirements, space

requirements, services, amenities, building materials, manpower, etc., Most of these other things are not within the purview of the 'housing' planner. These are to be dealt with by other agencies. And the problems created by other agencies are to be dealt with yet by other agencies. And thus it goes on *ad-infinitum*. There is no agency which studies the genesis of the problem, and if there can be something basically wrong in the whole process. Another fundamental error is the criterion for density of population in urban centres. It is argued that since the land costs are high, and that the length of services raise the development costs, it is desirable to have high densities. 200 to 300 persons per acre are now openly recommended.

The question of density of population is to be seen from the point of view of capacity of land to support a population with the available technology. If there is high density in a certain area, it has, nevertheless, to have enough open land around it to support the density of population. Thus the average density will come to be the same as if the population was dispersed in low densities. But the higher the density of settlement, the greater the hinterland, and means of communication, storage, marketing, preservation required to support it. This tends to make living more and more artificial. It is also well known that food after preservation and storage is not as nutritive as fresh food—particularly the perishable food items like meat, fish, poultry, vegetables, and milk.

The basic wrong lies in the assumption that scientific approach means centralization of everything in human settlement—centralized water supply, centralized employment centres, centralized housing and so on. Indeed science can and should decentralize as much as possible so that each community (if not each individual) can become as self supporting as possible; so that every person does not have to run hither and thither for every little thing; so that everything is as comprehensible, as near as possible; so that everything can be maintained by self or someone nearby. The second wrong lies in unwillingly adopting a wasteful way of life—wasting water, wasting all types of organic wastes, e.g., human excreta, animal excreta, vegetable waste, etc., which are potential sources of energy, and fertilizers. Most of the 'wastes' can and should be recycled within the community.

The third wrong lies in thinking that beauty lies only in those things which are not useful. For example, a green lawn is considered beautiful but not a field growing vegetables. Flowering trees are considered beautiful but not the fruit bearing trees. Pet animals are considered beautiful but not the milch cattle. This sort of attitude has a feudal heritage, and perhaps most difficult to get rid of. No planning proposals ever contain provision for growing vegetables, or rearing animals. These essential things are not considered beautiful, and like factories are relegated to specialized areas for being taken care of by special set of people. This is wrong, the attitude must change, their potential for beauty realized, and they should be integrated with human settlements.

The fourth wrong lies in thinking that speed of movement is a sign of progress. That is why we have faster than sound aircrafts, super fast trains, fast buses, cars, scooters, taxis . . . No one asks the question, why so fast, and where is one going? Is this really necessary? Most of the movement is for nothing, caused by faulty systems of growth, by unnecessary centralization. If one can get to the place of work in one hour instead of 2 hours, then it appears to be progress. But if the system of growth is such that one hour again transforms itself into two hours, then it is a self defeating progress. By proper planning most of the movement can be curtailed.

The fifth wrong is in applying different criteria for planning the cities and villages. Although it is not said so, but the villages are assumed to need no planning (*i.e.*, physical, economic, social). All that is needed is more crops from the same land. As to the buildings, one assumes that thatch and mud will do for the villages. Whereas when one thinks of the cities one thinks of elegant buildings, wide roads, lights, and all that human ingenuity can provide. Both places are for human settlements. There is no valid reason why differentiated criteria should be applied for their growth. If mud and thatch are good enough for villages they are equally good for cities. If animals can be reared in the villages so can they in the cities. The aspirations of the people are the same in both places. But the cities are made a preserve for the elites which is a hangover of the feudal past.

The sixth wrong is in giving to the 'industry', which is the backbone of the economy of the cities, the least consideration for making it a fit activity for human beings. It is assumed that working in industry is going to be monotonous, and generally dirty and noisy. An industrial area evokes the image of poverty, filth, noise, and fumes. It need not be so, if science is properly applied. But that is not the direction of our thought. We think only of more production, and not of human spirit. Industry should serve man and not *vice-versa*. The place of work of a large mass of humanity should be the pride of place, a showpiece, and not the place to be shunned.

I should now like to lay down the criteria for the design of human settlements bearing in mind our economic conditions and climate:

1. The settlements should possess a comprehensible human scale, and should not tend to become vast amorphous dormitories as the modern suburbs tend to be.
2. The settlements should not become the consumer of resources. Instead as much production and as much employment as possible should be generated from within each settlement.
3. The primary consideration in generating employment should be self-employment, or small scale cooperative enterprises. Large

scale industry or other enterprises should not be the part of human settlements as they tend to concentrate wealth and make the environment inhuman. For example open platform markets, and mobile shops (Rehris) provide very good shopping facilities for most parts of the year in our climate and are provided with very little investment by the state and the individual. They should be given first preference in the development process rather than be tempted to create big shopping centres to attract a lot of capital. Big shops may appear to bring some money for development, but the development costs go high and the big shops cause concentration of wealth.

4. The settlement should secure, as far as possible, the basic means of survival, namely, air, water, food, and shelter. Air should be kept free from pollution; water supply should not be dependent on a distant source; as much food as is possible should be grown or food providing animals should be reared on the settlements. All these activities should generate enough resources to build and maintain the houses in which people may live. This type of planning will reduce the burden on transport network.
5. Planning should be so done that most of the 'wastes' of the settlement are recirculated on the settlement itself. Very little, if at all, should have to be disposed off away from the place of living. The basic wastes are water, human and animal excreta, vegetable wastes. All these can be used by converting them into manure and methane gas. Manure should be used in vegetable fields, and methane gas should be used as a source of energy for running public utilities like tube well and street lighting, etc. Waste water can be used for irrigation. Waste vegetables can be used as food for animals. Other waste products like hides, hoofs, hairs, papers, etc., should be utilized in the cottage industry at the settlement.
6. Utilize natural sources of energy, *i.e.*, sun and wind for some of the requirements of the settlement.
7. Make open spaces of the settlement self-supporting by growing fruit trees, and vegetables. This does not mean there should not be any playing fields for children. It only means that such spaces as are normally grassed and kept fenced off and which are costly to maintain should in fact be utilized productively. Maintaining lawns and flower beds is much more costly than growing crops, vegetables, and trees, and both are equally beautiful.
8. The land policy on the settlement should be such that it does not become a commodity for speculation. Land should be common property of the residents, and it should be free from exploitation. It is the cost of land in cities which makes their development uncontrollable like a growing tornado.

9. As far as possible, all essentials of living, *i.e.*, houses, work places, relaxation, health care, education should be available at the place of settlements. This would obviate unnecessary travel, remove congestion from roads, and save precious time for productive activities.
10. Apply science and technology so that it helps small scale enterprises, and is available for use by all within a settlement. For example, scientific principles should be applied in growing vegetables, rearing animals, growing fruit trees, running small scale cottage industries; and recycling wastes, so that everything is put to best productive use.
11. As it is obvious that existing services and amenities in the urban centres are already overstressed and as it is also obvious that certain amount of growth of these urban centres is inevitable (because of employment opportunities and other activities) the new settlements should be designed such that they do not further burden the existing services and amenities. In other words, self sustaining principles should be applied to all human settlements as far as possible.

Thus it will be seen that designing human settlements bearing in mind certain economic criteria in our country requires much greater awareness than merely the economy of construction, good design of houses, and provision of essential amenities and services. Indeed it would appear that the provision of sewers, water supply lines, electricity supply as is being done now is unnecessarily expensive and wasteful. It should first be studied as to whether certain services can be provided, the wastes gainfully disposed off, and some energy generated from within the site of settlement. Only for the surplus wastes or extra requirements should one go outside the site.

I have done a detailed study for designing human settlements with self-sustaining approach. It would be worthwhile to give here some conclusions of this study. One typical layout plan is given in Fig. at p. 50. This should be studied very carefully. Some facts and figures are given herewith:

1. Each residential unit is on a 50 sq. mt. or 60 sq. yd. plot on which a house with three rooms of 150 sq. ft plus a courtyard and a terrace can be easily designed.
2. The settlement is designed to grow all the perishable requirements of food, and recirculate all organic wastes. Thus sheds for cows, goats, pigs, broilers, layers, and a pond for collecting wastes water and rearing fish are an integral part of the design. In this study no provision has been made for utilizing the wind and sun energy directly due to lack of sufficient knowledge.

3. As will be seen from the layout, the settlement provides potential of employment for 312 persons. Thus approximately 75 per cent of the bread winners need not go elsewhere for earning a livelihood.
4. It has also been calculated that by growing vegetables, rearing animals to meet the requirements of the perishable items of food, and by recirculating wastes, the surplus wealth produced will be enough to buy for the community all the non-perishable items of food, that is, cereals, pulses, fats and sugar. Further surplus wealth will be produced by small scale industry for which four sheds have been provided in the layout and which have an employment potential for approximately 120 persons. This surplus wealth can support partly, if not wholly, the community centres, the health centre and the schools. Thus this layout is an ideal design for cooperative activity by the community.

If this layout is adopted in the growth of urban centres, then it will attract well educated people to do all work scientifically. Thus good breed animals can be reared, high yielding varieties of vegetables can be grown, and wastes reproduced with maximum efficiency. This should lead to the generation of further surplus wealth for the community.

This type of layout is equally suitable for any new settlement—rural or urban. This layout can also form a basis for restructuring existing housing colonies, specially low density colonies, where maintenance of open spaces is a big problem.

This type of layout is very suitable for self-contained campuses like universities, institutes, and industrial complexes. Indeed this can be a very good way of ruralizing the urban areas. Quite a lot of people who migrate to the cities from villages in search of jobs have enough basic knowledge of farming and animal husbandry. This knowledge can be updated in such settlements. It is noticed that most of the workers, receive very meagre wages with which they can scarcely make both ends meet. Such settlements can augment their income in addition to providing good nutrition at their doorstep.



The Fundamentals of a National Housing Policy

M.N. BUCH

"IT is the historic role of the cities that they should serve as collecting points for the dispossessed."*

"A decent home for every family at a price within their means."†

THE FIVE YEAR Plans contain the basic objectives and goals of development and the strategy approach to their achievement. It is the misfortune of this country that in the field of urban development in general and housing in particular, the plan documents neither specify goals nor formulate strategy in the clear, unequivocal terms as, for example, the Government of the United Kingdom has done. The First Plan document states:

"Private enterprise has proved incapable of meeting the needs (of housing) and the State has had to assume direct initiative and responsibility in this field to an increasing extent."¹ This statement is not a declaration of policy, but only a tautological repetition of facts.

The sixth Plan draft document is equally imprecise. To quote:

"House construction is an economic activity, which fits in well with the pattern of activities to which priority will be given in the next two decades, not only because it meets a basic need, but, gives the application of appropriate technologies, also creates employment in a massive and decentralized scale and increases the much needed purchasing power in the hands of lower income groups."²

The same document also states, "A step up in this order in investment (from Rs. 950 crores to Rs. 2790 crores per annum) on housing ... is

"Social Strategy and Urban Growth" by Harold C. Fleming from the book, *The New City*.

†*The Human Environment—The British View*.

¹Government of India, Planning Commission, *The First Five Year Plan*, Chapter XXXV, para 1.

²Government of India, Planning Commission, *The Draft Five Year Plan, 1978-83*, Para 16-8.

inconsistent with the likely resource availability...’’³

As pieces of bureaucratic gibberish the two quotations above are absolute gems, but as indicators of policy, they make no sense whatsoever. Nor do the pious declarations of programme objectives in the period 1978-83 clarify the situation or enable us to get an over-view of how the government intends to tackle the housing problem on a national scale. The period from 1951, when the 5 Year Plan was formulated, to 1978 when the Sixth Plan theoretically came into being, has been wasted by us without formulating any rational housing policy. It is not financial resources that we have wasted, it is that priceless commodity, time.

It is not clear whether even the correct dimensions of the housing problem have been identified and appreciated. There are various estimates of the shortage of housing, but none are reliable or based on unimpeachable primary data. The shortage was estimated at 15.6 million units (11.8 million rural and 3.8 million urban units) at the beginning of Fifth Plan. The Sixth Plan draft document indicates the need to construct 4.5 million units per annum if the housing problem is to be tackled in a 20 year time frame. These figures by themselves make alarming reading and lead to a situation in which the Planning Commission itself is reduced to making platitudinous statements. Not that the Commission could do anything else but sermonise when only about 2.1 per cent of the plan allocation has been earmarked for housing.

This leads us to the question whether, given the present low priority for urban development in general and housing in particular, any meaningful housing policy can at all be developed. To speak in aphorisms, if a woman has six children to feed and all she has is half a teaspoon of *chutney*, how does she plan a meal? With allocation of resource at its present miserable level it is nonsense to speak in terms of housing policy.

The case for not giving a reasonable priority to urban development has been stated *ad nauseam* and needs no repetition. In fact it is fashionable to jump on the rural band wagon because some top brass says so and to tom-tom the fallacious argument that the cities are following at the cost of their rural brethren. This view emanates from the completely ignorant argument that the bright lights of the city are at the cost of the flickering oil lamps of the village. The record needs to be set right.

In the hierarchy of human settlements the village is of a lower order than a city, not because it is rude but because it is unifunctional. A village is a cluster of so small a size that apart from agriculture it cannot sustain other economic activity, especially manufacture. This is true as much of modern India as it was of ancient Sumeria and Babylon, of the Indus Valley civilization and the Maurya Empire. As a pastoral society grows, the complexity of life increases and people cluster together to indulge in

³Government of India, Planning Commission, *The Draft Five Year Plan*, 1978-83, para 16-17.

mutually beneficial and inter-related activities. Commerce and trade, industry, even government itself can function only with a degree of gregariousness. This is the genesis of cities, and there is nothing wicked or undesirable about this.

The reality of modern day rural India is that the rural population, in sympathy with population nationally, is on the increase. Sub-division and fragmentation of land has, in many parts of the country, rendered most holdings uneconomical. The army of the landless peasants is on the increase. Modernization of agriculture, especially the introduction of power driven equipment for lifting water, so necessary if production is to be increased, has reduced the capacity of agriculture to abolish labour. In other words, the village, as a unit that can care for its landless is no longer a working proposition. These dispossessed persons inevitably drift to the cities, which serve as the collecting points for these unfortunates.

If an improved and modernized agricultural economy dispossesses labour, it also creates employment opportunities in the sectors which serve agriculture and the industries which use agricultural produce as raw material. The Punjab has seen the spontaneous growth of a number of market towns which have a healthy working relationship with their rural hinterland. The channellizing of urban growth on a strong agricultural base is a feasible proposition. But channellizing urban growth when there is an impoverished agricultural base, with poverty driving people to the cities, is altogether another kettle of fish. However, as this could form the subject of another, independent paper, we need not go into details here. Suffice it to say that the more agriculture improves, the more will be the need for multi-functional activity and the more will the towns grow. A wise man recognises the trend and tries to ensure healthy mutual development, but a sick mind resists it and creates disaster. May India be blessed by the wise!

To return to the theme of housing, if cities and towns are a necessary good, if urbanization is inevitable and worthy of encouragement, then investment in infrastructural development becomes mandatory. Unlike the belief of some of our politicians, the cities are not the exclusive haunts of the idle rich on pleasure bent. They house a plethora of skills and a highly productive labour force. If this labour force is well fed and clothed, provided a healthy work environment and is housed in reasonable comfort it will contribute to national wealth and well being in good measure. But the same labour force, if housed mainly in slums, will be unhealthy, disaffected and inefficient. On a purely selfish plane, investment in housing the mass of people who form the work force, is at least as important as capital investment in the factories in which they work, the transport that they use, and the agriculture which produces the food that they eat. Investment in housing has a direct bearing on labour productivity and is an essential input into all forms of economic activity.

The first fundamental plank of a national housing policy, therefore, is the recognition that urbanization is not only an inevitable but a healthy trend and that it leads to a need for housing. This need must be met if labour productivity is to be optimized. The economic argument for a higher priority to housing, therefore, is complete.

Having said this much we are still faced with the critical resource constraints which are likely to plague Indian planning for decades to come (unless some of our God-men decide to produce oil wells instead of *vibhuti*). No one in his senses can expect investment in housing to be stepped up to a level of between Rs. 3,000 and Rs. 4,000 crores per annum. We just do not have those kinds of funds available to us. Even if we did, we do not have building materials for permanent structures in the quantities required to build even one million houses per year, leave alone 4.5 million houses.

This leads us to the next question. What sort of houses should we build? What is the resource available to us freely? Fortunately, in much of India land is still a resource available in some sizable quantities. For example, in villages we still have adequate waste lands to enable us to allocate house sites to the houseless. Over 7 million families have been provided house sites in rural areas and perhaps another 10 million families are in need of such sites. They are, or can be made, available. Rural housing is still based on indigenous, non-manufactured materials and while requiring little cash investment, make use of the labour of the beneficiary and the assistance of his neighbours. Being owned by the beneficiary himself, the house is kept in constant repair. It can, therefore, be mud built and will survive because of maintenance. Because a village is uncrowded there is ground absorption of effluent. Relatively primitive infra-structural systems, therefore, can service a village at low cost, protected water supply being the main requirement.

In much of rural India a housing policy demands the following:

- (a) Provision of house sites.
- (b) Some minimum investment in approach roads, water supply and power supply.
- (c) Soft loans for purchase of only those items, such as hardware, cladding material for roofs, etc., which are not naturally found in a village.

For the rest, till India is in the happy position to extend pucca housing to all villages and all villagers, we should encourage the villager to build his own house with his own labour and out of local materials. Any other policy which underplays the massive investment in terms of man hours, now going into rural housing, would court disaster.

In monetary terms we can assure a million beneficiaries for soft loans

at Rs. 1000 each per annum in the rural areas. This comes to only about Rs. 100 crores per annum. Assuming that we spend another Rs. 100 crores per annum on developing house sites we can have anything up to 2 million dwelling units being built every year in the rural areas at a public investment of about Rs. 200 crores per year. This level of investment is not only possible—it is essential if we are to have a meaningful housing programme.

In the urban areas the majority of housing tends to be tenant occupied. No tenant maintains his rented house and, therefore, in urban areas we have to construct more permanent structures. This reduces the possibility of self help and necessitates constant investment on a whole house rather than on a few limited components as is the case in rural areas. The town planners also contribute their mite in raising costs because their concept of a city is still the western one of an open city with large public spaces. This forces on us multi-storied buildings which are unsuited to our climate conditions, are costly to build and even more costly to maintain. Quality of construction being what it is in India, the stacking of dwelling units one above the other, even in 3 or 4 storied configurations, invariably leads to upstairs bathrooms leaking into the floor below, drain pipes choking and soil pipes breaking down.

In matters of design, therefore, a closer look at the low silhouette, high density configurations of the Indus Valley Civilization is called for. In more modern times the Madhya Pradesh Housing Board has developed an excellent design of a single-storied, high density development at Durg, with each house having a built-in incremental capability. The Housing and Urban Development Corporation, the Delhi Development Authority and some other public housing agencies have toyed with similar ideas. The large public spaces, which tend to invite encroachment, are replaced by useable public spaces and a large number of small but private open spaces. In other words, this new concept, which in fact is as old as India itself, has shifted the emphasis from the design of structures to the design of space. This can be termed the spatial concept of housing.

Despite opinion to the contrary land is still the most relatively easily available resource even in and around cities. Take the example of Delhi. Despite all the outcry about how land is scarce in Delhi as much as 4000 hectares have gone under unauthorized colonies, which have about 5 lakh pucca or semi-pucca structures. Even within the urbanizable limits of Delhi as defined by the Master Plan, about 6000 hectares of land is still available for acquisition for housing proper. Our tragedy is that we have not exploited this resource adequately, both because we have been wasteful and prodigal in the use of land and because we have no real housing policy that could guide the land use.

Self help in housing need not be a rural concept only. In fact every slum is an example of self help in house construction. To make no mistake about it—whether the state provides housing or not, the needy will help

themselves. It is because of this phenomenon that the need for state intervention in housing within a workable policy framework is critical. Now self help housing can come about in two ways:

- (a) The formation of cooperative housing societies which build flats for their members.
- (b) The provision of serviced sites to the economically weaker sections so that they can construct some form of shelter thereon.

The first option is an expensive one, especially because it involves traditional housing forms and calls for the use of expensive and scarce building material. Its applicability must, therefore, be restricted to the middle class or the 'kulaks' amongst the proletariat, the organized sector of industrial worker which has security of tenure and access to savings. But the vast majority of the work force in cities consists of labour not at all organized and this category of people cannot afford sizable investment in housing.

In fact in Madhaya Pradesh it was found that a monthly investment of Rs. fifteen was about as much as an average worker could afford for housing. This is true, by and large, of other states also. To make available a house site, with at least the minimum infrastructural development, together with the skeleton of a house, should form a fundamental plank of housing policy even in urban areas.

In opting for serviced sites it must be clearly understood that structurally the area would look like a slum as a substantial proportion of the houses would be jerry-built. But a planner who thinks in terms of space rather than structure, can create a situation in which infrastructurally the development is complete and the land is capable of recycling and re-use, without causing undue disturbance, as economic conditions improve. Certainly such planning can ensure that shelter is provided to all who need it at very low cost and that planning of space is done so meticulously that the very same area goes through stages of development in which, over a time period, it becomes pleasing structurally and functional infrastructurally.

Serviced sites with skeleton houses can cater for about 40 per cent of the urban population. About another 20 per cent can, provided loans are available and land can be purchased, build their own houses. This still leaves about 40 per cent who have to be provided public housing. An urban housing policy must, therefore, cover the entire spectrum of house sites, land loans for the middle class which can build its own houses and public housing for those who can afford a whole house. The target should be at least 1 million urban house of all sorts, including skeleton houses, per annum.

There is at present no capital market and no system of a regular mort-

gage market for funding for housing loans. Such loans whether to housing agencies or to private persons, at present literally form part of the normal plan resources. The Sixth plan document speaks of a Rs. 9000 crores investment in private housing but does not explain how this is to be funded. It is only recently that the Reserve Bank has permitted banks to invest upto Rs.75 crores, outside guaranteed debentures, every year in housing. The need to develop a mortgage market and to provide access to borrowings by individuals who want to build houses, therefore, cannot be over emphasised. Together with this will be needed a simplification of the urban land tenure system so that title to land is clear and unambiguous.

If land be the resource least scarce, then its rapid transfer to public hands is necessary. One estimate is that a seed capital of Rs. 300 crores is needed to permit states to build up a land bank. This is a manageable amount and can surely be found in a plan exceeding Rs. 69000 crores. In fact the plan at present provides only about Rs. 1500 crores for housing. This represents an investment of about Rs. 300 crores per year. If this is raised to about Rs. 1000 crores per year, *i.e.*, about Rs. 5000 crores for the Sixth Plan, and we accept the complete package of self help rural housing, an urban sites and services programme, public housing, etc., as many as 7 to 10 million housing units can be constructed with state assistance in a five year period. This would be substantially enlarged if private individuals are permitted access to borrowings at commercial rates. Even this level of investment represents less than 8 per cent of the Plan. Surely this is modest enough!

Housing of this magnitude calls for massive availability of building materials. It is suggested that where housing is of adequate scale in quantitative terms, we should discourage the use of brick, etc., which consume large quantities of fuel for manufacture, and instead go in for factory built components using waste materials like fly ash, with lime as a binder. The smaller towns and villages should be encouraged to go in for locally available materials to the extent possible. The setting up of a really go-ahead kind of a buildings research organization, with emphasis on application of research on a mass scale, is absolutely necessary. Neither the National Buildings Organization nor the Central Buildings Research Institute, as they function now, fit the bill.

To sum up, the fundamentals of a national housing policy appear to be:

- (a) A recognition that urbanization is an inescapable and irreversible process.
- (b) That the urban population has to be housed by public effort.
- (c) That the provision of adequate housing is an economically sound proposition as it increases labour productivity.
- (d) That rural housing is best undertaken by self help and that a degree

of minimum state support can greatly accelerate its growth.

- (e) That land is still a relatively freely available resource in both urban and rural areas and, therefore, housing has to be viewed in terms of optimizing the use of this resource.
- (f) That in urban areas only a package of self help housing for the very poor, public housing for the lower and middle income groups and self built housing for the better off can solve the housing problem.
- (g) That the construction of 7 to 10 million housing units in 5 years with state assistance and about 5 million units by purely private effort is a perfectly realisable goal.
- (h) That the level of investment in housing can be raised to about Rs. 5000 crores per five years without causing undue disturbance to the plan.
- (i) That access to borrowings by private individuals and rationalization of urban land tenures are essential.
- (j) That the entire system of materials management needs to be overhauled.
- (k) That research on housing design, techniques and materials needs to be strengthened and made really effective and meaningful.



Conservation of Existing Housing Stock

G.C. MATHUR

DIMENSION OF THE CURRENT HOUSING GAP IN INDIA

HOUSING INADEQUACIES in India have both quantitative and qualitative dimensions. Quantitatively, according to the estimates made in the National Buildings Organisation, the housing shortage in 1979 (as on 1.4.1979) is estimated at 19.7 million housing units—14.8 million in rural areas and 4.9 million in urban areas reckoning requirement at a minimum acceptable standard of housing. The relevant data on useable housing stock, housing requirement and housing shortage is diagrammatically represented in Fig. 1. Quantitatively speaking, housing conditions in terms of essential facilities like water supply, drainage and environmental hygiene are far from satisfactory. Wells and rivers were the major source of drinking water in almost all the States, generally for more than 80 per cent of household in rural areas. More than four-fifth of the households and in some States more than 95 per cent of the households, generally have no access to a latrine in rural areas and between a quarter to a half of the households in urban areas were similarly handicapped.

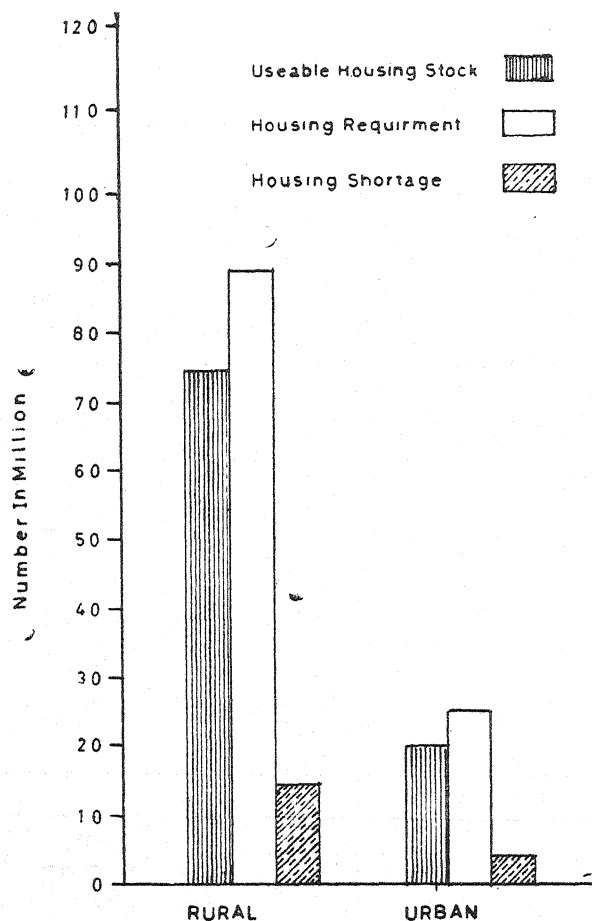
QUALITY OF HOUSING STOCK

Housing Material

Over 34 per cent of houses in urban areas are either *kutchha* or *semi-pucca* whereas 82 per cent of houses in rural areas fall in this category. Only 2 per cent of rural population live in pucca houses with plastered floorings, brick walls and tile roofing. The percentage distribution of residential houses by type of structure in rural and urban areas is given in Table 1.

In 1971, 50 per cent of urban households and 42 per cent of the urban population lived in one-room dwelling units and another 27 per cent of households and 28 per cent of population lived in two-room dwelling units. In the rural areas, 47 per cent of households and 40 per cent of population lived in one-room dwellings and 28 per cent of households and

ESTIMATED HOUSING STOCK (Usable) HOUSING
REQUIREMENTS AND HOUSING SHORTAGE AS ON
1. 4. 79



Note Residential census houses in the rural areas having walls of grass, leaves, reeds or bamboo and of roof of grass, leaves, reeds, bamboo or thatch and in urban areas having walls of grass, leaves, reeds or bamboo have been taken as unserviceable houses and therefore excluded from the total housing stock

SOURCE: N B O

FIG. 1

29 per cent of population in two-room dwellings. The percentage distribution of households and population by size of dwelling units in the rural and urban areas of the country in 1971 is given in Table 2.

Availability of Housing Space

In the urban areas, on an average, not more than 7 sq. mts. of housing

TABLE 1 DISTRIBUTION OF RESIDENTIAL HOUSES BY TYPE OF STRUCTURE (PERCENTAGE), 1973-74

<i>Type of Structure</i>	<i>Rural</i>	<i>Urban</i>
Pucca	18.5	64.6
Semi-pucca	32.4	19.6
Kutchra	49.1	15.8
Total	100.0	100.0

SOURCE: National Sample Survey (28th Round)

TABLE 2 PERCENTAGE DISTRIBUTION OF (a) HOUSEHOLDS AND (b) POPULATION BY SIZE OF DWELLING UNITS, 1971

<i>Size of Dwelling Units</i>	<i>(a) Percentage of Households</i>		
	<i>Rural</i>	<i>Urban</i>	<i>Total</i>
One-room	47.26	50.10	47.82
Two-room	28.47	26.93	28.17
Three-room	12.14	11.42	12.00
Four-room	60.04	5.71	5.98
Five or more room	6.02	5.64	5.94
Unspecified number of rooms and details unspecified.	0.07	1.45	0.09
All sizes	100.00	100.00	100.00

<i>Size of Dwelling Units</i>	<i>(b) Percentage of Population</i>		
	<i>Rural</i>	<i>Urban</i>	<i>Total</i>
One-room	39.63	41.22	40.04
Two-room	28.77	28.08	28.63
Three-room	14.19	13.62	14.08
Four-room	7.88	7.59	7.83
Five or more room	9.51	8.95	9.40
Unspecified number of rooms and details unspecified	0.02	0.04	0.02
All sizes	100.00	100.00	100.00

SOURCE: Census of India, 1971.

space per person is available, the average living space per household being 32.6 sq. mts. One-third of the urban families with monthly per capita expenditure of less than Rs. 43 have a housing space per person of not more than 5 sq. mts. In the rural areas, on an average, the housing space available per person is less than 8 sq. mts., the average living space per household being 40.4 sq. mts.

Another interesting aspect relating to the quality of housing is the variation of area per household in relation to the private consumption expenditure. In urban areas, the area per household does not increase with increase in per capita household expenditure. In rural areas, on the other hand, the average area per household increases as a function of per capita household expenditure. Because of the scarcity of land in urban areas, the accent seems to be on improving the quality of housing rather than increasing the housing space. The data on availability of housing space per person in different expenditure class are given in Table 3.

TABLE 3 AVAILABILITY OF HOUSING SPACE, 1973-74

<i>Per Capita Expenditure Category</i>	<i>Rural</i>		<i>Urban</i>	
	<i>Percentage of households in expenditure category</i>	<i>Space available per head (sq. mt.)</i>	<i>Percentage of households in expendi- ture category</i>	<i>Space available per head (sq. mt.)</i>
Below Rs. 21	5.1	5.0	2.2	3.8
Rs. 21-28	10.2	5.6	4.9	4.2
Rs. 28-43	39.6	6.9	24.9	5.1
Rs. 43-75	34.4	9.1	33.2	6.7
Rs. 75-100	6.1	11.5	12.8	8.3
Rs. 100-150	3.3	15.2	13.5	11.6
Rs. 150 and above	1.0	25.2	8.3	17.0
Total (including not reported)	100.0	7.8	100.0	6.9

SOURCE: National Sample Survey (28th Round).

Age of Housing Stock

The age of a dwelling determines, to a large extent, its quality. The older the building, the more likely it is to be structurally unsound and functionally obsolete. In fact, the National Sample Survey (19th Round) has revealed that nearly 45 per cent of the rural and 50 per cent of the urban households live in houses ageing more than 20 years. Middle Class Living Surveys conducted in 45 different centres in the country have revealed that in half the centres, over 20 percent of the houses are bad and

excepting major cities, in all other cities, between 77 and 92 per cent of Middle Class dwellings were either without durable wall or roof or floor. Evidence is thus conclusive that even to meet the needs of existing population we need a major programme of repair and reconstruction to upgrade sub-standard houses and to improve access to essential amenities and facilities.

THE GROWING URBAN HOUSING PROBLEM

The poor housing situation especially in towns and cities is a direct outcome of uncontrolled urban growth witnessed during the last six decades and more. The proportion of urban to total population rose from about 10 per cent in 1901 to 17 per cent in 1951, 19 per cent in 1961 and 20 per cent in 1971. By 2000 A.D., the urban population is expected to be as much as 29 per cent of the total population.

The urban housing situation is further aggravated by the increase in the number of towns and cities. The total number of towns in the country has gone up from 171 in 1901 to 3119 in 1971. The class I cities with population of 0.1 million and above have gone up from 25 in 1901 to 151 in 1971. The class II towns (50,000-99,999) have increased from 44 to 2019 during the same period. The class III towns (20,000-49,999) have increased five times in number. The class IV towns (10,000-19,999) have more than doubled during the period 1901-1971. It is noteworthy that among these towns, the largest towns have grown the fastest. According to the 1971 census, 49 per cent of the total urban population lives in class I cities. Another 32 per cent lives in class II and III cities while only 19 per cent lives in class IV, V and VI towns.

GROWTH OF METROPOLITAN CITIES—POPULATION, HOUSEHOLDS AND HOUSING UNITS

There has been a rapid growth of population in our metropolitan cities (cities with population of 1 million and above) during 1961-71 which has resulted in continuously rising densities of population in all these cities. In the case of Calcutta, the population density has increased from 28,434 persons per sq. km. in 1961 to 30,276 persons per sq. km. in 1971. In Greater Bombay, the density has risen from 9,486 persons per sq. km. in 1961 to 13,640 persons in 1971 and in Madras, from 13,644 persons per sq. km. to 19,293 persons per sq. km. during the same period. The cities of Ahmedabad, Bangalore, Delhi, Hyderabad, Kanpur and Poona have also experienced rising densities of population during 1961-71. The percentage growth of population and with it, the percentage growth in the number of households and dwelling units during 1961-71 in the metropolitan cities is indicated in Table 4.

TABLE 4 PERCENTAGE GROWTH OF POPULATION, HOUSEHOLDS
AND DWELLING UNITS IN SELECTED METROPOLITAN
CITIES DURING 1961-71.

<i>Metropolitan Cities</i>	<i>Population (%)</i>	<i>Housholds(%)</i>	<i>Dwelling Units (%)</i>
Calcutta	—	—	—
Greater Bombay	44	44	46
Delhi	59	65	93
Madras	43	20	33
Hyderabad	44	5	6
Bangalore	35	34	31
Ahmedabad	38	19	7
Kanpur	31	34	39
Poona	41	34	33
All urban areas	38	29	38

SOURCE: 1. Census of India, 1971. 2. National Buildings Organisation.

Available data indicate that 77 per cent of households and 75 per cent of population in Greater Bombay lives in one-room dwellings. Similarly, 68 per cent of households and 55 per cent of population in Calcutta lives in single-room dwellings. The position is no better in the cities of Delhi, Madras, Ahmedabad, Kanpur and Poona. The average number of persons per room occupying single-room dwellings varies from 4.14 in Kanpur to 5.26 in Bombay.

RATE OF NEW HOUSING CONSTRUCTION

Quantitatively, the backlog in housing is continuously on the increase (from 14.5 million housing units in 1971 to 15.6 million housing units in 1974 to 19.7 million housing units in 1979) as the rate of construction has not kept pace with the growth of population. On present reckoning, it would be necessary to construct about 4.75 million housing units on an average every year for the next 20 years to clear the backlog in housing.

Over the next 20 years, the housing requirement of additional households due to growth in population is estimated at 20.4 million units in the urban areas and 30.6 million units in rural areas. Taking this into account, the housing shortage is likely to increase by about 2 million units annually. As against this, the present rate of new housing construction is around 3 lakh dwelling units per year which meets barely a third of the new demand for housing in urban areas.

Further, it is estimated that annually one per cent of housing stock in India is becoming unserviceable on account of obsolescence.

NEED FOR REPAIR, REHABILITATION AND REBUILDING OF EXISTING HOUSING STOCK

In a situation in which the annual rate of housing construction does not meet the requirement of growth in population, not to speak of the requirements of wiping out the existing backlog and replacement of obsolescent dwelling units, the repair and conservation of existing housing stock assumes great importance. The significance of this is apparent from the data collected on housing condition by the National Sample Survey in its 17th Round which reveals that 18.4 per cent of the houses in urban areas were in a bad and dilapidated conditions. Given the current low level of construction activity, the prospect of housing the increasing urban population in modern *pucca* houses is severely limited. In the absence of a policy providing for the conservation and improvement of existing housing stock in towns and cities, the bulk of the urban population would eventually be driven to settling down in slums or sharing dwelling units leading to further congestion in housing. In such a situation, the housing backlog would continue to accumulate in the years to come.

In urban areas, the Rent Control Laws have a deleterious effect on the preservation of existing housing stock. Since the rental income is inelastic in relation to the cost of repairs and maintenance, landlords simply disinvest by not repairing the building or by under-maintenance. For instance, the rents in Bombay are frozen at the level of 1940. With increases in the prices of building materials and wages of construction labour, landlords do not pay proper attention to the repairs and maintenance of the buildings with the result that a large number of houses collapse prematurely every year. Similarly, in the walled city of Delhi, old buildings were neither repaired nor re-constructed by the landlords because of the low returns from investment in housing repairs. It is estimated that in Delhi, the number of houses requiring structural repairs is around 23,000. A private house-owner who cannot increase his rent because of the Rent Control Act is content to leave the houses in a state of dis-repair in the hope that some day the building will become unusable and the tenants will leave on their own accord. In the large metropolitan cities, the land on which buildings stand is worth much more than the structure itself. The private owner would much rather demolish the houses and re-build it for being let out on a higher rent or sell the property at considerable profit if he were able to find a buyer than incur expenditure on repairs and maintenance.

The impact of the operation of the Rent Control Laws in large cities has made it increasingly clear that a policy which expects the private owners to provide housing stock and still operate within a system of regulated rents is unworkable. In the circumstance, the object of State Policy should be to provide for conservation and improvement of existing housing stock in large towns and metropolitan cities through regular annual repairs and maintenance of old building and improvement in the essential

devices and facilities required in the neighbourhood. At present, public authorities generally accept the responsibility for repair and maintenance only in the case of public owned housing projects. Even in such projects the work is not done regularly and efficiently. It is, therefore, necessary to adopt a policy whereby all buildings, whether public owned or owned privately, are regarded as a valuable national asset and kept in good repair.

ECONOMICS OF REPAIR PROGRAMME VERSUS NEW HOUSING CONSTRUCTION

Studies have established that measures in terms of man-years of shelter provided per lakh of rupees invested on a repair programme is far more productive than new construction. According to the studies undertaken by HUDCO, it is more economical to repair the existing housing stock and prolong its life than to invest in new housing construction. The average cost of repairs to rehabilitate one square meter of plinth area ranges from Rs. 90 to Rs. 114 as against Rs. 415 per square metre of plinth area of new houses. Even on the basis of shelter year, the economics is in favour of a repair programme. Taking a typical scheme in Bombay, the cost per household shelter year works out to Rs. 148.24 in the case of repairs and Rs. 181.48 for new construction. The details are as follows:

<i>Particulars</i>	<i>Repairs*</i> (per unit)	<i>New Construction†</i> (per unit)
Average size of living space	28 sq. mt.	30-50 sq. mt.
Plinth area rate per sq. mt.	Rs. 90	Rs. 476
Average cost	Rs. 2520	Rs. 14,518
Size of family benefiting	8 members	8 members
Total household years of shelter provided	17	80
Cost per household shelter year	Rs. 148.24	Rs. 181.48

A study made in the National Buildings Organisation in respect of old Delhi city has brought out that an expenditure of Rs. 1 lakh on the structural repairs of old buildings will provide shelter to 18.4 households for a period of 15 years or to 275 household year. On the other hand, an investment of Rs. 1 lakh on the construction of 4 two-roomed housing units (each costing Rs. 25,000) would provide shelter to 4 households for 50

* Actual cost of Bombay Repairs Board.

† New schemes received for sanction from Bombay area excluding new Bombay.

years or 200 household year. The expected life of new construction being assumed at 50 years and the cost of repair at Rs. 120 per sq. mt. of plinth area.

A relevant comparison to judge the relative economics of a repair programme vis-a-vis new construction is the relative real cost involved in rehabilitating existing stock as against creating new stock. New housing construction requires huge investment to create educational, medical transport, and recreational services along with new housing. Repaired houses on the other hand do not call for fresh investments since such facilities are already available. On purely economic considerations, therefore, a housing preservation programme is beneficial and prevents premature depletion of housing stock by obsolescence.

INSTITUTIONAL ARRANGEMENT FOR MANAGEMENT OF HOUSING STOCK

The foregoing analysis reveals that apart from taking steps for construction of new dwellings, we need to ensure that the existing housing stock is preserved in a state of good repair through a programme of repairs, rehabilitation and re-building. Viewed in this manner, repairs and renewals constitute as much an element in housing as new housing construction. Given the magnitude of the task of conserving the existing housing stock, it needs a well-thought out institutional set-up to undertake large scale programmes for housing repairs and reconstruction. The Maharashtra Government has tackled this problem by setting up a Building Repairs and Re-construction Board in Bombay in 1969. The main functions of the Board are to carry out structural repairs to dangerous buildings which are likely to fall immediately, to reconstruct dilapidated building which are beyond economical repairs and to provide for re-housing of occupiers who, because of such repairs or re-construction, are dishoused. The activities of the Bombay Building and Re-construction Board have since been taken over by the Maharashtra Housing and Area Development Authority set up in 1977. To finance repairs and re-construction, a cess was levied on buildings in old city of Bombay and proceeds of this were augmented by yearly grants from the State Government and the Municipal Corporation. The repair cess is levied on all residential buildings in the old city of Bombay at the following rates:

For buildings constructed before 1940.	at 34 per cent of the rateable value.
For buildings constructed from 1940 to 1950	at 26 per cent of the rateable value.
For buildings constructed from 1950 to 1969	at 18 per cent of the rateable value.

The Maharashtra Housing and Area Development Authority draws up a phased programme of undertaking repairs of houses depending on the urgency with which repairs have to be undertaken. Accordingly, buildings requiring immediate repairs are taken up first and buildings which are not so bad get a lesser priority in the schedule of work.

The Conference of State Ministers incharge of Housing, Urban Development and Local Government (Nov., 1978) which examined the question of creating Repairs and Reconstruction Boards in all other States, has recommended that the State Governments and Union Territories should enact legislation to set up Building Repairs and Reconstruction Boards in large cities on the lines of Maharashtra Building Repairs and Reconstruction Board. Pending the establishment of such Boards the existing housing construction agencies like the State Housing Boards should be entrusted with repairs and reconstruction work and public funds should be made available for building repairs and maintenance. To help such Boards, function effectively, they should also be in a position to borrow from the Housing and Urban Development Corporation which has also taken a policy decision to finance repair and reconstruction work on a large scale.

NEED FOR CONSERVATION AND IMPROVEMENT OF RURAL HOUSING STOCK—ROOF LOAN SCHEME FOR RURAL HOUSES

The rural housing situation is appalling by even minimum standards of human health and hygiene. According to the 1971 census, of the 98.42 million census houses in rural areas, nearly 50 per cent have mud as the predominant material for wall, 11 per cent have used grass, mud, leaves, reed or bamboo, 8 per cent have used unburnt bricks and one per cent have used wood as wall material. In all, 70 per cent of rural residential dwellings have used mud, grass, leaves, reed, bamboo, unburnt bricks or wood as their wall material. For roofing material nearly 49 per cent of houses have used grass, leaves, thatch, wood, mud, unburnt bricks or bamboo, while 36 per cent of the houses have used tiles, slate or shingles for putting up roofs.

A reasonably durable roof is the basic need of rural house to give protection against inclemencies of weather. The existing roofing material of rural houses not only requires periodical renewals and re-conditioning but stands perennially exposed to fire hazards. Such materials are also prone to fast decay.

In a rural housing unit, nearly 30 per cent of the cost is accounted for by the cost of roofing material. Laying the roof also requires some skilled labour which cannot always be provided by rural households who generally construct their houses with self-help. The cost and skill factors in putting up a durable roof is a source of financial burden particularly to the economically weaker sections of the population in the rural areas.

Improvement in rural housing through a systematic programme of repairs, renewals and re-building could bring off a whole series of community improvement in its wake, for example, in drainage, sullage, sewerage, water supply, changes in sanitation habits like use of permanent toilets and baths.

However, rural housing programme being essentially an aided self-help programme, bulk of the rural families who are poor, need assistance to improve their housing stock and keep them in good repair. Such an assistance could be either in the form of a loan or a subsidy, preferably in kind, or as is already being done in some of the States like Kerala and Karnataka which have taken up massive rural housing schemes to construct houses on house sites allotted to the deserving poor. The magnitude of the task involved in repair and reconstruction needs an organizational set-up at the State level possibly a State Rural Housing Board which is best suited to undertake large-scale programmes of repairs and renewals.



*Housing Finance, Mortgage Insurance And Secondary Mortgage Markets**

H.U. BIJLANI

THE 1960s AND 1970s can aptly be described as decades of institutional development in the field of housing finance.

In almost all developing countries in Africa, Asia and Latin America, important national housing finance institutions have come up. In all but few countries of Africa, governments have supported housing programmes by setting up a national institution for the financing of housing usually linked to an existing national housing authority.

However, the housing finance situation in Asia is difficult to summarise since there exists a very large divergence between countries with advanced housing finance system (Singapore) and those where the system is still at rudimentary stage (Afghanistan, Bangladesh).

A recent report stated that "Developing countries of Asia and Far East have been hampered by a lack of institutional facilities for savings and for long-term finance. In recent years the situation has improved somewhat. In addition, nearly every country in the region has a financial organisation at the national level to help with housing programmes."

Among the three major less developed regions, Latin America in general shows the best developed housing finance system. Brazil, Chile, Colombia and Cuba have made substantial progress in setting up institutions and programmes on a broad scale to facilitate the financing of housing.

One could attribute this to the faster rate of economic growth of Latin American countries during the last decade. The rate of economic growth has been 6.6 per cent between 1967 and 1971. The corresponding rate of growth during 1961-67 was as high as 5.5 per cent.

Two major events in the field of housing finance operations have been the introduction of : (a) mortgage insurance and, (b) secondary mortgage markets. This system already in vogue in developed countries is now fast catching up in developing countries.

Some of the Latin American developing countries are the pioneers in

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this field of strengthening housing finance system in the developing world.

The objective of the mortgage insurance scheme is to insure house building agencies or banks or other home finance lending institutions against lossess which they may sustain as a result of loans and advances of credit made by them for financing construction of houses, land development, rehabilitation and slum relocation programmes, etc.

Mortgage insurance has helped attract institutional, large individual investors who seek a higher return than provided by saving account and who otherwise would invest outside of the home financing field.

The system of mortgage insurance works in the following manner. Upon application the mortgage insurance companies insure any eligible mortgage-against payment of premium. Premium charges are payable by the applicant either in cash or debentures issued by the insurance authority.

Eligible mortgage must: (i) have a satisfactory maturity, (ii) contain complete amortization provisions, (iii) bear a particular gross interest, etc.

The mortgagee is entitled to receive the benefit of the insurance: (i) upon prompt conveyance, (ii) on assignment of all claims of the mortgage transaction or fore-closure proceedings, (iii) at the time of conveyance to the Corporation of the property covered by the mortgage, the mortgagor had redeemed the property and paid in full all obligations under the mortgage, and a reasonable amount for necessary expenses incurred with the fore-closure proceedings or the acquisition of the mortgaged property otherwise and the conveyance thereof the insurance agency/corporation/authority.

The introduction of the scheme for mortgage insurance by both the private insurance companies and by the public sector has helped to reap two advantages.

- (i) It has (a) attracted resources to the housing sector; (b) made possible lending on softer terms because the lender is insulated against the risk involved due to defaults; and (c) the cash down payments have been reduced.
- (ii) It ensures that the mortgages have provided a guarantee to the buyer of the home that the houses meet acceptable housing standards.

The problems that most developing countries face in introducing mortgage insurance schemes pertain to:

- (i) identification of institutions which can undertake this job,
- (ii) lack of legal framework to put the scheme in operation,
- (iii) fears on account of expected high rates of defaults and the limited insurance premia that agencies (even if premium incidence is

- shifted to beneficiaries) can pay to avail of this facility, and
- (iv) low level of investment in residential housing and hence lack of interest in this type of scheme.

However, despite this, many developing countries have been able to overcome their teething problems and introduced the schemes of mortgage insurance.

Good examples of mortgage insurance in creating an internal market for sale of mortgages can be found in Guatemala, the Dominion Republic and Chile.

In Guatemala and the Dominion Republic a separate agency similar to the USA FHA insures mortgages, while in Chile, the insurance of mortgages is automatic for loans made by the savings and loan system.

In Guatemala and the Dominion Republic, in addition to the underwriting process of the institution prior to making of the loan, the Government agency also performs an underwriting function.

In Guatemala, the institution is the Federal Housing Administration and in the Dominion Republic it is the National Housing Bank. In Chile, the Federal Home Loan Bank automatically guarantees mortgages made by the member associations without any independent underwriting.

Guatemala has attracted \$25 million worth of additional investment for housing, the Dominion Republic \$7.2 million, and Chile \$47.2 million. Some other countries in Latin America like Panama, Bolivia and El Salvador have legislation permitting this insurance, but it has not yet been implemented due to priority given to other activities deemed more necessary to the success of the institutions.

Brazil has a unique mortgage insurance scheme. Forty of the largest insurance companies in the country have formed a consortium or pool, which insures all mortgages originated within the savings and loan system.

Thus, in Brazil, mortgage insurance is provided by the private savings and loan associations and stock-owned associations are automatically insured by this consortium.

In Africa, under-development of the housing mortgage market is conspicuous. Mortgage insurance exists only in few countries of Africa. Ghana, for example, has recently set up a state insurance corporation which includes mortgages.

In English speaking African countries (Botswana, Gambia, Kenya, Lesotho, Liberia, Malawi, Nigeria, Tanzania, Uganda, etc.) the larger ones have been able to make a fair progress including incipient form of mortgage insurance.

Discussions with visitors from developing countries reveal that default cases are very few. The percentage of defaults varies from high in the early years of insurance to low at later stages. As loan value ratio is high

initially default incidence is more and falls rapidly as and when the borrower has contributed significantly to the equity.

Most of the Asian and African countries after having completed the first stage of housing finance institutional development are now on the threshold of developing the mortgage insurance market, etc. Countries like Iran have already developed even a secondary mortgage market.

To sum up, four distinct features emerge from this international survey of mortgage insurance in developing countries:

- (i) In sizable number of countries the mortgage insurance business is undertaken by Government promoted companies/departments.
- (ii) In few countries, notably Chile, mortgage insurance is private sector contribution
- (iii) In few countries, mortgage insurance is automatic in the case of lending by affiliated institutions.
- (iv) In few countries, legislation to promote mortgage insurance exists but awaits implementation for want of institutions.

Despite these variations, the motivation for its introduction came from the experience built up in the developed countries, notably the US. Diversities in operations, however, abound even in developed countries.

In Australia, the 'Housing Loan Insurance Corporation' was formed in 1965. Lending institutions may insure loans upto \$ 30,000 with the corporation. A single premium of 1.5 per cent of the amount of loan for loans representing 80 per cent or more of valuation is charged by the Corporation. The premium is to be paid by the borrower and can be included in the loan.

The US mortgage guarantee came up in the years following the economic collapse of 1929. At that time, most mortgages were of the short-term duration (7-10 years). The default ratio was discouraging and hovered around 50 per cent.

Among the institutions created to solve the problems of residential finance was the Federal Housing Administration (FHA). Essentially, it operates a lenders guarantee programme aimed at reducing the risks of mortgage lenders. In return for a premium ($\frac{1}{8}$ per cent) paid by the borrower, the FHA insures the lender against the risk that the borrower will default.

In recent years, the scheme has been extended to include families with low or moderate income who could not qualify because of past credit histories or irregularities. Further, FHA has now been given much greater freedom to insure mortgage in declining areas.

The standards of 'acceptable risks' have been broadened to include areas which are reasonably viable giving consideration to the need for providing adequate housing for families with low and moderate income in

such areas.

In order that the existing insurance fund is not burdened with the new risks involved, a 'special risk insurance fund' has been set up. If the losses paid out of this fund exceed its income the difference is met by Congressional appropriations.

Further, the private insurance companies provide the same service as FHA but insure the lender against a portion of the loan as against 100 per cent coverage provided by FHA.

The premium of private insurance companies is 0.5 per cent in the first year and thereafter 0.25 per cent of the declining balance of the outstanding loan as against 0.5 per cent charged by FHA throughout the currency of the policy.

It is now hoped that out of valuable experience available in the developing countries plus the feedback on the working of developed mortgage insurance scheme in developed countries, the scheme of mortgage insurance will take deep roots in less developed countries.

Development of the secondary mortgage market is a vital link in the total housing finance network. The secondary mortgage market has helped the countries (which have this market) to:

- (i) make available for housing substantial financial resources of investors not specifically interested in housing,
- (ii) help transfer savings of well-to-do, for implementation of the housing schemes for the poor. This helps reverse the process prevalent in most countries where scarce public funds have benefited the middle income groups to finance housing, and
- (iii) impart liquidity to investments in the housing sector.

In some countries, this secondary mortgage is in an advanced stage and operates as part and parcel of an advanced capital market. The advantage of the secondary mortgage market system becomes obvious when we see that despite underdeveloped stage of capital market in developing countries, the secondary mortgage market can be conveniently developed.

This is because mortgages in real estate market differ from capital market in one important respect; mortgage owners place more reliance on the value of the property on which mortgage lien is placed for security than on debtors.

The other favourable factor in developing countries is the enormous level of housing deficits and under the impact of rising population and these deficits, the value of residential properties has a tendency to rise over a period of time. This makes the risk on mortgage lending or investing negligible.

The secondary mortgage market has been particularly successful in countries with a government guarantee of mortgages. In Chile, as refer-

red to above, government insurance is automatic for mortgages made by the savings and loan associations. Sales of mortgages are mainly to individual investors who want a higher rate of return than saving accounts provide.

These mortgages are usually resold at interest rates close to the original rates. If mortgages are resold with servicing retained, income in the form of mortgage servicing and administration fees is also provided to the institutions, permitting operations on more economic scales.

Guatemala has an FHA system similar to the United States and has been very successful in developing this secondary mortgage market. The Dominican Republic has also adopted this system.

Data for these countries show rapid growth. In one year during 1967-68, the turnover of the secondary mortgage market increased by 84 per cent in Chile, 22 per cent in the Dominican Republic and over 24 per cent in Guatemala. Further, the Chilean secondary mortgage market owes its growth to the system of 'monetary adjustment'.

Brazil, Chile and Colombia have made monetary adjustments operative. In Brazil, monetary adjustment is applied to all saving deposits to balance outstanding on loan granted for housing finance and mortgage bonds. The system applies a monetary correction factor every three months in line with the corrected value of the National Treasury's readjustable bonds. These bonds in turn, are readjusted in line with the general wholesale price.

Like mortgage insurance, the developed countries like the US have provided an operational model for adoption. It appears that the secondary mortgage market had its origin in the United States.

Prior to the 1930s, the secondary mortgage market operations in that country were carried out by small-scale private secondary mortgage companies. In 1938, the US Congress under the Housing Act of 1938, provided for the establishment of the Federal National Mortgage Association known as 'Fannie Mae'.

It was financed with government funds and authorized to buy and sell federal housing administration insured and the veteran administration guaranteed mortgages. Its purpose was to provide a secondary market in which approved mortgages could be sold.

Under the Housing Act of 1954, FUMA was rechartered and recognized as a corporation privately owned by those who sell mortgages to it to undertake the following functions:

- (i) continuing to provide the secondary mortgage market for federally underwritten mortgages,
- (ii) furnishing special assistance to FHA and VA lend financing, and
- (iii) liquidating the mortgages it had acquired under its original charter.

Under Section 1719 of the Chapter III of the Act, title 12 (Banks and Banking) the following guidelines were specified for the secondary mortgage market:

1. The operations of the Corporation established for the said purpose shall be confined, so far as practicable, to mortgages which are deemed by the Corporation to be of such quality type and class as to meet generally the purchase standards imposed by private institutional mortgage investors.

In the interest of assuring sound operation the prices to be paid by the Corporation for mortgage purchased in its secondary market operations under this section, should be established from time to time within the range of market prices for the particular class of mortgages involved as determined by the Corporation.

The volume of the Corporation's purchases and sales and the establishment of the purchase prices, sale prices, and charges or fees in its secondary market operations under this Section should be determined by the Corporation from time to time and such determinations should be consistent with the objectives that such purchases and rules should be effected only at such prices and such terms and will reasonably prevent excessive use of the Corporation's facilities and that operations of the Corporation under this section should be within its income derived from such operations and that such operations should be self-supporting.

2. In the interest of assuring sound operation, any loan made by the Corporation in its secondary market operations and any extension or renewal thereof, shall not exceed 90 per cent of the unpaid principal balances of the mortgages securing the loan and shall bear interest at a rate consistent with general loan facilities established from time to time by the Corporation's Board of Directors. Any such loan shall mature in not more than 12 months and the terms of extension or renewal shall not exceed 12 months.

3. The volume of the Corporation's lending activities and the establishment of its loan ratios, interest rates, maturities and charges of fees in its secondary market operations, under this Section, should be determined by the Corporation from time to time and such determination should be consistent with the objective of seeing that the lending activities are conducted on such terms as will reasonably prevent excessive use of the Corporation's facilities and that the operations of the Corporation should be within its income derived from such operations and that such operations should be self-supporting.

4. The Corporation is authorized to set aside any mortgages held by it under this Section and upon approval of the secretary of treasury to issue and sell securities based upon the mortgages so set aside.

Housing activity in India, apart from other reasons, suffers mainly from inadequate availability of funds and materials. Because of planning priori-

ties to encourage projects for augmenting food, fuel and fertilizer production, funds for the housing sector have been kept at a low level. Also since the housing sector involves financing on a long-term basis, the risks involved are greater.

If insurance scheme can be introduced on repayments, it will attract many investors to funnel money for housing. Similarly, if a secondary mortgage market is created, it will add to the funds invested in housing and thereby help resolve the problem of funds faster.

In almost all countries where these two schemes have been introduced investment in housing has been augmented. Hence, there can be no two opinions on creation of a mortgage insurance and a secondary mortgage market.

Despite these advantages, there are broadly four questions that need to be raised in this regard:

- (a) How do we link up this secondary mortgage market with the existing capital market?
- (b) Will it not be the case that creation of such a market will attract funds away from priority sectors? How to ensure that this scheme will benefit the housing programme for the poor?
- (c) Do we create new institutions or use the existing institutions like the General Insurance Corporation of India, HUDCO or any newly created subsidiary of these institutions can take up these functions?
- (d) With the existing overdues level of housing boards, for which data are available, can we really work out a viable scheme of mortgage insurance?

As regards the first question, trading in mortgages is age-old in India. Further, India has a significant turnover in trading of securities, bonds, debentures, etc., and the existing capital market is well developed to take on this additional capital assets for trading.

The only question that will have to be settled is regarding the level of turnover that the secondary mortgage market will visualize in India.

To start with, mortgage insurance can be introduced on housing programme in the public sector, *i.e.*, housing boards, improvement trusts, development authorities, etc. These public sector agencies should be on the approved list of the insurance corporation.

The other issue could be the availability of a legal framework for an effective trading in mortgages and also mortgage insurance. For instance, in Malaysia, where mortgage insurance is in existence, there is a provision under the Malaysian Insurance Act of 1963 which states that estates or interests in land in the Federation and upon the value of that security, loans secured on any such estate or interest are approved investments.

This will mean that the investments made through second mortgages are 'approved'. In contrast, Section 27A (i) (m) of the Indian Insurance Act, 1938, recognized only the first mortgages on immovable properties. The difference is vital and important for launching a secondary mortgage market in India wherein second charge will be in vogue.

Similarly, the laws regarding for closure and taking of vacant possession of the insured properties will have to be simplified.

As regards the second point, apart from the policy issue of the total capital to be made available to the housing sector, it can be argued that at least one thing can be ensured and that is that the private sector which at present shies away from investment in low income housing will be assured of its capital repayment both in the long and short term.

The existing private sector investment can be re-directed from luxury housing to low-cost housing, since the second mortgage market will ensure liquidity for them. One factor that attracts the private sector to luxury housing is the short recoupment period for investment and the same will now be available for low income housing.

Further, the existing trend of scarce housing resources devoted to middle and upper income groups (due to short loan repayment period) can also be arrested and reversed.

As regards the institutions required for this purpose, one can either: (a) create a subsidiary of an existing organization to perform these functions or (b) extend the functions of GIC to include this variety of business in insurance and secondary trading in mortgages, and (c) a separate statutory authority under the Housing Act can be created.

The existing level of overdues is certainly a constraint. The data collected for overdues of housing boards give some disconcerting trends. The details are as given in the table below:

PERCENTAGE OF OVERDUES TO SCHEDULED COLLECTION

	1976-77	1975-76	1974-75	1973-74
Gujarat	7.40	8.94	4.96	9.61
Madhya Pradesh	7.87	7.57	13.57	28.08
Maharashtra	9.06	16.97	3.49	7.29
Uttar Pradesh	19.19	28.12	42.47	39.60
Tamil Nadu	22.47	28.01	32.25	43.35
West Bengal	N.A.	4.84	N.A.	N.A.
Orissa	70.18	54.14	28.46	32.42
Average for all housing boards	15.43	21.01	19.44	24.40

But the basic reason for these overdues could be the rental housing programmes pursued by the housing boards. The delinquency default rate

on hire purchase instalments is low and is not expected to be higher than 10 per cent or so on an average.

If that be the case, then premium rates can be suitably adjusted to take care of this default rate. The experience of other countries shows that defaults are very low. In New Zealand, for instance, since 1953, out of over 3,000 loans, defaults have occurred in only six cases.

To conclude, developing countries are on the threshold of an exciting area in the field of housing finance. This is despite the limited resources available in general and allocated to housing sector in particular. Many innovations of the above type, *i.e.*, mortgage insurance, secondary mortgage market are now accepted as theoretically sound and the positive feedback now available portend healthy trends for housing finance system in the developing countries in general.

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Policy Alternatives for Squatter Resettlement in Delhi

GIRISH K. MISRA

THE URBAN Growth in India, the basic instrumentality of which is the rural urban migration, is primarily due to the under developed nature of our rural areas. Unless efforts are made to provide jobs in these areas or nearby towns nothing would prevent rural population to migrate to metropolitan cities. The creation of jobs in rural areas, in fact, calls for a countywide effort to mobilize our natural resources for their fuller utilization.

In a situation where rural to urban migration is minimized as well as people are not allowed to squat on public or private lands in a city, there will always be a considerable number that after migrating to a city would procure not only accommodation but also job. However, this would be a situation which would lessen the pressure of population on land in metropolitan cities. In this paper an attempt has been made to discuss policy alternatives not only to minimize the rural to urban migration but also to resettle squatters such that neither their individual income goes down nor their women folk lose job opportunities. Before we plunge into the main discussion on the subject, a brief account of the re-settlement policies adopted in Delhi may be given.

RESETTLEMENT POLICIES IN DELHI: A REVIEW

Several policy measures and action programmes have been adopted to tackle the problem of squatter colonies from time to time. These include action programmes recommended as a part of urban renewal and re-development in the Master Plan of Delhi (1962-1981), the Jhuggi-Jhonpri Removal Scheme (1960) and the Environmental Improvement Programme of the national Fifth Five Year Plan (1974-79). In fact, it is the Delhi Master Plan that suggested a general policy frame for planning for development and relocation of squatters. The Jhuggi-Jhonpri Removal Scheme was the actual implementation of a resettlement programme; whereas the Environmental Improvement Programme was meant for improving

environmental conditions in already existing slum and squatter settlements. The programme, however, does not contain any policy towards re-settlement.

It was recommended in the Interim General Plan of Delhi¹ that developed land wherever available near the city or near the work places of those to be relocated, should be reserved for relocation of 'busti' dwellers. At the time of the preparation of the Master Plan of Delhi proper sites were carefully selected keeping in view the distance factor. It was also suggested that all re-settlement schemes should form part of larger composite neighbourhoods consisting of a mix of low-income, lower middle and middle income groups. The plan clearly indicated that the areas to be earmarked for low income rural migrants should not be located on the periphery of the city since it will create problems of transportation to the place of employment and it will not be possible for these low income group families to bear the cost of the transportation for long distances out of their meagre resources. These areas of low income groups were to be developed on the basis of 'Site and Service' programme with proper layout and basic services and community facilities. Also, the plan suggested to issue directives to all the colonisers and the government departments engaged in building activities to reserve 25 per cent of the new housing for the rehabilitation of sum dwellers, displaced as a result of clearing operation. The cost of construction of the house was proposed to be subsidized in a most ingenious way.

The policies adopted for the implementation of the Jhuggi-Jhonpri Removal Scheme were as under:

- (i) The selection of sites for relocating the squatters was subject to the availability of essential services like roads, sewerage, water supply and electricity.
- (ii) Each squatter family was to be allotted, on a 99 year lease, a 80 sq. yd. developed plot containing a latrine, a water tap and plinth on which the family could build a hut or house according to its needs.
- (iii) The cost of land was to be subsidized to the extent of 50 per cent in the case of families with an income of less than Rs. 250 per month. Such families had the option to make the payment in monthly instalment in ten years.
- (iv) The families with incomes higher than Rs. 250 per month could get the plots on 'no profit no loss' basis by making full payment in one lumpsum.

A special survey was also conducted in June-July, 1960 and only those covered by the survey were to be provided alternate accommodation.

¹Town Planning Organization, *Interim General Plan for Greater Delhi, 1956*, pp. 52-53.

These squatters were called as 'eligibles' and the rest were considered as 'ineligibles'. The latter were to be evicted without any provision of alternate accommodation.

The implementation of the scheme, however, revealed some difficulties and this led to modification in 1962. First, the allotment of open developed plots on lease encouraged Benami sales and trafficking in the open developed plots. As a result of that the element of ownership was eliminated. The plots were now to be constructed and given to the squatters on rent. Secondly, the bulk of squatter families were not able to pay the monthly instalment of Rs. 12.79 as required under the scheme.

During the course of implementation of the revised scheme it was found that 'eligible' and 'ineligible' squatters were intermixed. As it was found difficult to clear areas without removing both eligible and ineligible squatters, it was decided by the Government in May, 1964 to allot camping sites of 25 sq. yd. each even to the ineligible squatters in far off colonies on payment of full rent as compared to subsidized rent charged from the eligibles. As this led to fresh squatting, the facility was withdrawn in 1965.

A further review of the scheme reveals that only 25 sq.yd. camping plots were to be developed for allotment to pre-1960 squatters on the production of census slips issued to them.

As a matter of fact, the classification of squatter families as 'eligible' and 'ineligible' was illogical which led to the denial of basic amenities to the ineligible. The shifting of people was also done in a haphazard manner and without any intimation to those involved in the process. Moreover, it was done on the basis of individual family without any regard to the social networks or to the community ties that existed as symbiotic relationship between social and spatial systems. The scheme also ignored proximity to the place of work for an overwhelming proportion of inhabitants. Besides, the squatter families were shifted to relocation sites without the development of the basic services and amenities although as a policy it should not have been practiced.

To provide a fairly satisfactory environment to those living in slum and squatter settlements, the Environmental Improvement Programme was implemented as a part of the national scheme. But the investment under EIP in various squatter settlements proved to be a waste as the squatters were shifted to new sites.

Relocation During the National Emergency Period

As many as 16 new resettlement colonies and complexes were developed by the Delhi Development Authority during emergency with a gigantic task to locate about 1.5 lakh squatter families within its spell of 18 months; whereas before emergency only 18 resettlement colonies were established over a period of 15 years replacing 57,368 squatter families. During emergency, land was forcefully occupied

for the development of a few colonies like Mangolpuri and Sultanpuri without notifying the land for acquisition. Even now the land for colonies developed outside the urban fringe is yet to be formally developed.²

Policy Alternatives for Squatter Resettlement

As is evident from the characteristics of the Jhuggi Jhonpri Removal Scheme mentioned earlier in this paper, the scheme is an example where frequent revisions in its proposals and changes in the administrative agency had chequered its course of implementation and did not fulfil the objectives for which it was meant. Anyway such schemes have to undergo such revisions as nothing can be concretized in the very beginning. Now when enough revision has taken place, perhaps, an attempt in this direction may prove to be successful in times to come. What policy alternatives can be prescribed for squatter resettlement is the major question deserving answer. Let us examine this question and a couple of others stated earlier in the succeeding paragraphs based on a study³ conducted by the Indian Institute of Public Administration.

Shifting of Squatters

It is almost due to the government intervention that the squatter families had to shift to the new sites. It is found in the study that more than 95 per cent respondents gave this reason for leaving squatter settlements. Not a single respondent in the sample, however, seemed to be tempted by the availability of plots free of cost and interest free loan for the construction of house at the time of shifting from squatter settlements. Out of 370 respondents, 119 (32.16 per cent) still prefer to go back to the old sites. Major reasons given in this regard are the nearness to the place of employment and availability of household works for their wives in nearby localities. Perhaps, these were the two main reasons which did not allow them to put more weight on the availability of free plots and interest free loan for the construction of house particularly when these were otherwise available to them in old places free of cost with more space. But on the other hand, it was observed that no advance notice was served on squatter dwellers before shifting them to the new sites. Also, government did not either take their consent or the new sites were not shown to the squatter dwellers before shifting them. Besides, relocation was done without developing the new sites fully. These facts have been very well endorsed by the government officials during their interview in the study. According to people's representatives this happened because things were moving very fast

²Jha, G., "Relocation of Squatters in Delhi: Quest for a Policy", paper presented to a Seminar on *Control of Urban Building Activities* (March 20-21, 1978), Indian Institute of Public Administration, New Delhi.

³Misra, G.K. and R. Gupta, *Resettlement Policies in Delhi* (Cyclostyled), Indian Institute of Public Administration, New Delhi, p.153.

and these formalities would have taken years in finalizing the plan. The shifting was done in a haphazard manner and without information to those involved in the process. Moreover, it was done on the basis of individual family without regard to the social networks or to the community ties that existed among various families and without realizing that such settlements had developed symbiotic relationship between social and spatial systems. No dislocation allowance was paid to the evacuees and also the provisions of truck facility for shifting was not uniform.

In light of the above discussion, it is suggested that: (i) implementation of a JJ Removal Scheme should not be done in a hurry; (ii) advance notice should be served on the squatters and also all the consequences of the programme should be brought to the notice of the squatters; (iii) a dislocation allowance should be given to the squatters; (iv) truck facility should be given uniformly; (v) shifting of people should not be based on individual family only, but on squatter settlement as a whole; (vi) site should be shown to the squatters before shifting them, and (vii) relocation should be undertaken when sites are fully developed.

Site Selection

As has been stated earlier, in the Master Plan of Delhi, it was proposed not to relocate low income rural migrants on the periphery of the city. But in reality the situation turned out to be quite different. In majority of cases squatter families have been shifted at the outskirts of the city which has not only affected their income but has also caused immense inconveniences, especially because their expenditure on transport has increased and their wives have lost household works. It was noticed in the survey⁴ that the percentage of respondents travelling more than 20 km. to go to their place of employment from residence is 12.7 in case of selected new re-settlement colonies. The average distance travelled by a respondent for going to the place of employment from new resettlement colonies comes to 11.8 km. and the average time spent is more than one hour each way. Obviously, the average amount spent in new colonies is Rs. 32.21 which is more than 10 per cent of their average monthly income. Housewives of these resettlers have also to spend an amount of Rs. 20.93 for travelling a distance of 6.29 km. in 40.65 minutes on an average in new resettlement colonies, the ones that came up during emergency. The situation in old resettlement colonies which were established before emergency is comparatively much better in such cases. It is, therefore, suggested that new sites should be selected as far as possible nearer to the place of employment.

Size of Plot

Keeping in view the financial difficulties and the paucity of land in

⁴Misra and Gupta, *op. cit.*, p.153.

Delhi, it is really difficult to go back to the provision of 80 sq. yd. plots as was the situation existing in the beginning of the implementation of JJ Removal Scheme. But it is equally necessary to increase the size of plots from 25 sq. yd. to 40 sq. yd. atleast. It was revealed in the survey also that households in new re-settlement colonies are not satisfied with present accommodation. About half of the respondents considers it to be worse than what was available to them in squatter settlements where 72 per cent cases had the size of plot more than 25 sq. yd. The provisions of 40 sq. yd. plot would enable the squatter families to build individual houses with adequate chance to add one more extra room and also enable construction of individual latrines resulting in better sanitary conditions.

Ownership of Plot

To improve the housing conditions in resettlement colonies, ownership of plots should be conferred on resettlers. It will be a bold policy to sell the plots on 'no profit, no loss basis' to squatters and realize their price in easy instalments. The only lurking fear, however, is that plots given in this fashion are likely to change hands. This, of course, can be removed by adequate safeguards on Benami transactions. The Corporation can take advantage of this policy in many ways, viz., by levying house tax and ensuring regular payments of lease money. And, at the same time, government can recover on instalment basis most of the expenditure that is being incurred on the JJ Removal Scheme.

Construction of Tenements

While conducting survey in resettlement colonies, it was noticed that mostly the tenements are nothing but shacks and huts which resemble those in the squatter areas. The only solution to improve the condition is to allow the resettlers to construct their houses according to the standard design evolved by the DDA. Of course, this strategy has to be preceded by the policy of sale of plots on 'no profit no loss basis'. There were a few cases in the past when DDA and Delhi Improvement Trust constructed houses for resettlers. The same work can be resumed by the DDA now without any financial and time constraints. Alternatively, the DDA should construct houses for these squatters which can thereafter be allotted to them on hire-purchase basis or on a nominal rent charge. In both the cases 50 per cent subsidy has to be provided by the government. This can even be practiced in case of a composite colony scheme.

'Eligible' and 'Ineligible' Squatters

With the passage of time, the discrimination between 'eligible' and 'ineligible' has disappeared to some extent but in future, it should be made a policy not to observe it again. As a matter of fact, the very classification of squatter families between 'eligible' and 'ineligible' was illogical. The

distinction also led to the denial of basic amenities to the ineligible except for the provision of water community latrines

A Composite Colony Scheme

In squatter settlements people were living in a mixed community due to which various types of jobs were available to them. After these people were shifted to resettlement colonies, availability of jobs declined considerably particularly for the women folk. It is, therefore, suggested that a composite scheme should be formulated where 30 per cent land should be reserved for EWS and the remaining 70 per cent should be kept to house better class people.

Provision of Services and Amenities

During the course of implementation of the JJ Removal Scheme, the lack of adequate provision of services and amenities and their gross neglect and improper and insufficient maintenance caused the greatest failure in the implementation of the scheme. In the survey conducted by the Indian Institute of Public Administration also, the living conditions between squatter settlements and re-settlement colonies have been marked better in the former case. In re settlement colonies where the DDA claims to provide services according to the standards prescribed in the JJ Removal Scheme, it is noticed in the survey that resettlers are neither satisfied with the quality of the services nor with their quantity. Hence, while revising these standards, a survey of the type conducted by the IIPA should form the basis.

Recovery of Ground Rent and Licence Fee

A large amount of ground rent and licence fee could not be recovered from the allottees which affected the implementation of the JJ Removal Scheme. Rent collection was also not enforced strictly with penalties attached in case of default. Although with the transfer of the scheme from Municipal Corporation of Delhi to DDA, the situation has improved substantially but as a policy the recovery of ground rent and licence fee should be made strictly.

Even if an attempt is made by the government to revise the JJ Removal Scheme based on the above stated policy alternatives, the problem, undoubtedly, is not going to be resolved. Considering the rate at which the rural migrants are flowing into the city every year and the limitation of urban land, the scheme will not be a success. Even to make the composite colony scheme practicable it is needed that the flow of these migrants is kept to its minimum.

This can be achieved only when the existing towns and large villages in rural areas are provided with adequate social and economic infrastructure to sustain processing industries. Once employment opportunities are

made available to them within their rural surroundings, they would certainly not like to migrate to big cities. On the other hand, squatting on public and private lands should not remain an easy task for them. Strict vigilance should be kept on their squatting on lands. This approach will certainly dishearten those who either cannot reside with their relatives or friends in resettlement colonies due to lack of space or cannot afford to purchase (*i.e.*, on hire-purchase basis) or acquire a house on rent. This policy will have its far-reaching effects. Sooner or later, people in rural areas will notice this approach followed in metropolitan cities and, as a result, they would think twice before migrating to these cities.

As the urban land is limited, it is not possible to build resettlement colonies near the core area of the city. Under such circumstances, if resettlers are located at the outskirts of the city, their family income will be affected and their expenditure on transport will increase. To combat such a problem, the only alternative is to relocate them near factories or industries and provide them technical training to enable them to get jobs in these factories or industries. To eliminate the fear of their women folk losing job opportunities, always a composite colony scheme of the type mentioned earlier, should be implemented. Also, to lessen the burden of squatters on Delhi, they can be shifted to its Ring Towns provided job opportunities can be created there.



Self-Help in Housing : Cost Reduction or Change Agent ?

KIRTEE SHAH

THERE ARE few other fields where the gap between theory and practice seems as wide and unbridgeable as it does in the field of self-help-housing. The vociferous intensity with which the seminarists and theoreticians proclaim self-help-housing as the panacea to most of our housing problems, is equalled by the coolness and disdain with which housing practitioners ignore this concept. Even the most cursory glance at the housing scene in India would reveal that on self-help-housing there is a disproportionately large (though isolated) verbiage but very little planned action. Self-help in housing, in a way, is like democracy in the international polity: there are as many interpretations and definitions as there are styles and each one defines it to suit his special convenience and vested interest.

SELF-HELP-HOUSING: THE CONVENTIONAL MEANING

The phrase self-help-housing, as it is commonly used and understood by the politicians and policy makers, by the governments and their housing agencies as well as by the physical and economic planners, has acquired a limited, rather sectoral connotation. Normally, the self-help in the housing context means user involvement in providing skilled/unskilled labour—largely unskilled—in building low-cost houses. Its main purpose is to reduce the rupee cost of the building; to lower the capital investment which, in turn, could increase the poor's accessibility to the externally organized, agency-built, formal housing. The self-help concept, in its prevalent usage in India, is considered relevant in building houses for the poor and is predominantly meant to help bridge the budgetary gaps through no-cost unskilled labour in the housing programmes organized by the governments and their housing agencies. According to this limited yet widely recognized meaning:

- (a) Self-help is to be organized and promoted by outsiders. It is

obviously different from the self-initiated self-help.

- (b) It is to be used by the external government, semi-government, non-government agencies in implementing their schemes. It is not working for the self. It is also not people working collectively on their own.
- (c) It is participation, but only in part, only in a limited manner. It is participation not in defining need, not in designing programme, not in choosing design or preparing budget, but only fitting into a pre-meditated and externally conditioned course of action.
- (d) It has only a monetary purpose. It is meant to effect economy in cost of construction. Social, human and educational gains are largely incidental byproducts.
- (e) It is meant for the poor alone. Others have no use of it.

THE EXISTING SCHEMES

Are there many such even narrowly defined self-help housing schemes? Who is planning them? Who is implementing them? Are they successful in achieving even their limited objectives? Because however limited, self-help, as part substitute for cash investment, is a desirable objective. According to the recent report of the Reserve Bank of India, by the end of the Fifth Plan, 20.8 million houses in rural India and 8.3 million houses in the Indian cities are needed to be built to eliminate backlog, meet fresh needs and replace delapidated structures. For this, the Reserve Bank estimates an investment of Rs. 32,450 million (the present investment is Rs. 6780 million) in rural housing and Rs. 17350 million (the present investment is Rs. 2580 million) in urban housing each year for the next twenty years. As there is a great paucity of funds to invest in the housing sector and as a large number of houses are to be built, both in the villages and the cities, even a marginal saving in money cost or reduction in capital investment would go a long way. It could help in covering a greater number of families in need and, more importantly, could increase the poorer sections' access to the formal housing market. Without question, self-help would be good even if it marginally reduced the investment burden.

Questionable Hypothesis

However, the fact is that there are not many such even narrowly defined self-help-housing schemes and those which are, fail to achieve even their limited objective of reducing the rupee cost of the building. The reasons for this are partly definitional and conceptual but largely organizational. First, it is debatable if self-help in form of unskilled labour results in real reduction in the cost of the house if the organizational cost of the promotional effort and the opportunity cost to the participant is taken into

account. Second, it is doubtful if the conventional organizations and the organizational arrangements through which regular housing supply is maintained in the formal housing market, without major organizational changes, innovations and modification, are equipped to handle and benefit from such self-help activities. And the third, it is questionable whether a 'tagged on' approach, where participation is only an aspect of a continuous process, taken in isolation, is really viable.

An Experience

An example will help clarifying some of the issues. Take for instance the housing programme undertaken by the Government of Gujarat for the landless, homeless poor in a number of villages of the State. It is a typical case representing the attitudes and narrow definitions of self-help described earlier. In this scheme, through which thousands of houses are being built, the pattern of financial contribution for a house, which is estimated to cost Rs. 1800, is stated as under:

Rs. 1,000	—	Bank or HUDCO loan
Rs. 400	—	State government subsidy
Rs. 250	—	District Panchayat subsidy
Rs. 150	—	Beneficiary self-help
<hr/>		
Rs. 1,800		

Ostensibly, 'self-help' in the programme has been introduced for various behavioural, motivational and operational reasons over and above the usual monetary considerations of cost saving. First, total subsidy is considered ill-advised as it perpetuates dependence on others. Second, it is considered that if the beneficiary builds his house with his own hands he feels a greater sense of attachment and belonging. Third, his involvement in construction is supposed to equip him for better maintenance in the future. And fourth, the contribution in kind is expected to reduce the need for cash by a corresponding amount.

Despite the rhetoric on the other meanings and usages of self-help, particularly on the behavioural, motivational and maintenance aspects, it is apparent from the way the scheme is being carried out that the sole purpose of the item 'self-help' in this scheme is to bridge the budgetary gap. If anything else was sought to be achieved from self-help, it would not have been an optional item. As the scheme is conceived and implemented, 'self-help' is replaceable by payment of Rs. 150 in cash by the beneficiary!

This is no place to analyze the performance or merits and demerits of this scheme. However, it is no secret that it is neither achieving any of its

'non-monetary but human' objectives nor the self-help, in form of unskilled labour component equivalent in cost to Rs. 150, is forthcoming!

Reasons for Failure

What are the reasons? First, the involvement of the target community in the early stages of programme planning is non-existent. They have practically no say in choosing sites, their own land plots, house design, construction materials or even their neighbours. All decisions are taken by others—and outsiders—without in any way consulting the clients. Yet the beneficiaries, to use the government terminology, are expected to contribute self-help! How would they contribute labour in building a house if the site is not acceptable to them? What motivation would they have in building a house which is not going to satisfy even their most primary needs? How would they work if materials are alien and the construction technique adopted in building the houses require skills which people do not possess? It is obvious that if they were involved in the early stages of programme planning, and if, planning and design decisions were taken keeping in mind peoples' choices and skills, there would have been a more congenial climate for greater involvement in building houses.

Organizational Inappropriateness: Contractors

The organizational arrangements which have been made to build houses in this programme constitute the second important factor that prevents peoples' contribution through self-help. The houses are built by (a) regular contractor, (b) departmental machinery of the district panchayat or, (c) voluntary agencies. In their scheme of things, the contractors are not able to use beneficiaries as unskilled labour. They find them expensive, inefficient, disobedient, unorganized, unproductive and even bossy. The beneficiaries' continuous presence on the site, according to some contractors, is positively detrimental to their business interest. The contractors are unwilling to involve beneficiaries in building houses for which they have obtained contracts and committed a progress schedule.

Department of the Government

The departmental machinery of district/taluka, panchayat is in even worse plight. There is little flexibility or manoeuvring room in their arrangements. They obviously lack faith in people and their potential. They neither have time nor patience. Self-help to them is essentially a tool of meeting the budgetary deficit and it is preferred that either people pay in cash or house is left incomplete at the stage where cash runs out. The incomplete portion is to be completed through self-help. A number of roofless houses left incomplete for years in the villages stand testimony to this concept.

Voluntary Agencies

The voluntary or non-government agencies, atleast in principle, are the most equipped to use people as resource. They have the necessary flexibility, openness, faith, commitment and motivated personnel to go through rather longish participatory processes. Yet, their performance in this regard is rather mixed. First, a very few non-government agencies are involved in implementing this scheme. Some of them take the limited view of self-help. Many a times they plug the budgetary gap through their own resources. But occasionally they also get people to work and are able to show positive results. However, involvement of voluntary agencies in planning and implementation of such housing schemes is rather exceptional. They constitute an insignificant minority compared to the massive housing effort planned and implemented by the conventional housing agencies and organizations like housing boards, regular contractors, PWD and other departmental channel of the governments. The experience of this rural housing programme shows that unless a radical restructuring is introduced in the existing implementing machinery, it would be difficult to avail of peoples' self-help.

Not Housing But Development

Those few cases in which organizational innovations have been possible—for instance, involvement of a competent and appropriately oriented voluntary agency in the planning and implementation of the scheme—many positive things have happened—particularly, if people have been involved at different stages of decision making. In such cases people have contributed voluntary labour, many a times for more than equivalent of Rs. 150. The experience of working together has fostered a new spirit of community solidarity and built and strengthened peoples' organizations, which, besides enhancing their collective bargaining capacity, have served as launching pad for other developmental activities.

Organisational Cost

However, counting strictly the cost-benefit analysis of peoples' involvement in construction alone—keeping aside the social and human benefits—even in the above mentioned special cases, the picture is not very encouraging. It has been found that the cost of organizing self-help—overhead expenses of community promoters and other related expenses—occasionally outweigh the collective inputs through self-help. Put simply, the organizational cost of self-help is higher than the savings that accrues.

Opportunity Cost

More importantly, it is also found that the opportunity cost to the beneficiary who participates in the agency promoted self-help scheme is often higher compared to the corresponding amount saved through

substitution of the hired labour (assuming, of course, that the alternative earning opportunity was available if he chose not to work on building his own house). In few villages of Dholka taluka, where this experience with a voluntary agency in charge of the scheme was tried out, it has been found that those tasks the hired labourers would complete in 30-35 days, when performed by the scheme beneficiaries, have taken twice or thrice as many days. In rupee terms, if the unskilled labour component, when built through a normal contractor, was budgeted at 8 to 10 per cent of the total cost of the house, when replaced by self-help of the beneficiary, becomes 15 to 18 per cent.

Is Self-Help Alien?

Accepting the fact that the government sector is going to remain the major supplier of houses for the poor in the formal market for years to come—the private sector has not yet entered the supply market so far the poorman's housing is concerned, and the informal sector, the largest producer of houses, does not yet figure in our scheme of things—and also accepting the situation that the major organizational restructuring is nowhere on the horizon the voluntary agencies and other innovations are more an exception rather than rule—is it right to conclude that self-help in housing is a non-starter in the Indian context? Is it alien to our way of working? Is the concept an importation from the West, like many other ideas and, therefore, not applicable to our situation?

Informal Sector in Housing—Urban

It does not seem so if we look around. Both in our villages and cities people have been building houses on their own. While the Indian metropolitan cities are growing at about 4 per cent per annum, the slums, they say, are growing at 8 per cent. What does it indicate? It only shows that without the intervention of any sort from the formal institutions, people in need are building houses on their own. They, on their own, go through almost all processes that a normal housing agency goes through. They acquire land—albeit, in case of slums, illegally, collect materials, find resources—in cash or kind—put together skills and build. It is entirely a different matter that the structures they erect don't fit into our image of a 'house'. Whatever the product, and it is so much determined by the quality of the components which, in turn, so heavily depends on the availability of resources, the slums and shanty towns are an eloquent testimony that people have the required motivation, desire to work, capacity to toil and also some useful building skills.

Informal Sector in Housing—Rural

The rural scene, so far housing production in the non-formal sector—shall we say peoples' sector?—is concerned, presents even more promising

a picture. For years, people in the villages, on their own, have built inexpensive, long-lasting, scientifically oriented, functionally designed, aesthetically pleasing and graceful houses using local materials and skills. Before the advent of the external inputs through the government, semi-government, voluntary and other channels in form of money, design and planning services, and assistance in actual construction, the poor have been building on their own; without the government subsidy and bank loan; without the architects, designers and contractors; without the organizational assistance of government body or a voluntary institution. This means that people build only when they strongly feel the need and save some money. It also means that within the social fabric of the village there are arrangements for financial assistance and other kinds of mutual help. And it certainly means that the people have the design and construction skills.

Reverse Participation

These rural and urban experiences indicate that self-help in housing is neither alien nor new. It is very much part of our social and organizational systems which are responsible for our built environment. Why is it then difficult and expensive to get peoples' self-help in building their houses?

It is necessary to realize that in order to involve people in building their own houses at a very low organizational cost, and, in order to benefit from their skills and resources, our concept of organizing self-help-housing will have to be altered fundamentally. Which means that instead of asking people to participate in the housing programmes organized by the formal housing agencies, the housing agencies themselves will have to get organized to participate in the housing activities planned and carried out by the people. The roles will have to be reversed. Presently, the housing agencies play the primary role while the people play a mere secondary and supportive role. In the new arrangement, the agencies will have to play a secondary to peoples' primary role. Agencies, at present, are producers of houses. They will have to assume a less dominating facilitator's function.

Site and Services, Slum Improvement

Is this possible? At least in the urban context it is already happening, if not out of choice, out of helplessness caused by the paucity of funds in face of massive backlog and increasing need. The Sites and Services, Slum Improvement, Incremental Housing and other related concepts or projects reflect the new realization that the housing agencies should play a supportive role in meeting the housing need of the masses. In Slum Improvement, the shelter is more or less taken as given and efforts are directed towards providing missing inputs like water, waste disposal, pavements, electricity, fire protection and social amenities like school, health

facility, community meeting place, recreation ground, etc. The overall environmental improvement is stressed and the effort towards house is at best confined to shelter upgrading. In Sites and Services, preparatory supportive arrangements are made in form of infrastructural services in anticipation of peoples' own action in building houses. The concept of incremental house derives support from the knowledge that completion of a house is a continuing process and people add to their 'shell' or 'core' as need, opportunity and resources find themselves in a positively creative combination!

Lack of Participation

All these approaches do recognize the primary role of the people. Yet, how participatory are these alternative strategies? Are people involved in Sites and Services and Slum Improvement projects? Do they have a say in choosing the inputs or in the way they are introduced? Who plans these schemes? Who implements them? How prepared are the people to maintain the improved environment? How much user control is evident in these schemes and their implementation? Are outsiders still dominating in a different manner?

Unfortunately, in the above schemes, though ideas are new, organizations are old. In introducing and implementing the alternative approaches to formal housing, the old organizations still hold sway. In the approach like Sites and Services and Environmental Upgrading, peoples' involvement is much more necessary compared to building a conventional house because, in there, the scheme only initiates a process, the user is expected to carry it further. The scheme only does a part of the work, the remaining is to be completed by the individual or the group. If he is not involved to begin with, the real purpose is defeated. And that is what seems to happen to most such schemes.

Appropriate Organizations

Once again, to succeed, what is needed are appropriate organizations—organizations which are people oriented, which are equipped to recognize peoples' abilities and capable of involving them at each stage of planning and implementing process.

Housing as Change Agent

While discussing poor and their housing it is rather short-sighted to see participation in the limited context of supplying unskilled labour in building house and self-help as a means of effecting some savings in the cost of construction. Because seen in the larger developmental perspective, participation has connotations which touch upon larger issues of fundamental structural changes which could confer power to mould environment to its users and self-help could be symbolic of rejecting a dependency equation

wherein a giver-receiver relationship may be replaced by a much healthier partnership deal. Handled sensitively, housing could be a change agent and participation in the housing process could lead to a developmental chain reaction.

It is true that a house is a dead investment and more often than not proves burdensome to the poor. However, it is seldom recognized that if organized properly and handled imaginative by, it could prove to be a valuable instrument of motivating individual and organizing communities. For the poorest, a house is a distant dream. It requires land and that amount of investment which is beyond his means. So far the house is concerned he is resigned to his fate. And, therefore, if the house comes to him, not as dole or gift, but as a step-by-step realization of a distant dream, through his own initiative, hardwork, and mental, emotional and physical involvement, then he feels a sense of achievement. If he thinks about it, contributes ideas in designing it, goes through processes which shape it, and continues to struggle to obtain it, then it is much more than a brick-mud structure to him. It becomes an asset which makes him realize his own worth and potential. He begins to value himself, his friends and his helpers. The house, in the process of realization, builds the man.

The housing process, similarly, could help build communities. The working together in groups could become an important educational experience which may lay foundation for the development of permanent community institutions. If the individuals work together and share responsibility in achieving a common goal, the resultant solidarity and collective strength could become a vital community asset. The individuals could become self-reliant and responsible. And the group, having achieved one success could move to the next—a development chain reaction could start. Those who build houses together today could get ready to start a Balwadi tomorrow and a milk cooperative the day after.

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Book Reviews

The Management of Squatter Upgrading by DAVID PASTEUR, Saxon House, 1979, pp. 232.

This is a case study of organization and management of a squatter upgrading programme in Lusaka, capital of Zambia. Every researcher is some sort of a faith healer. The present author seems to have profound faith in 'management' which constitutes thus the focus of the study. To quote his statements: "The reality of development is not achieved until the implementation process is complete. It is shortcomings in this final stage of the management process that have been responsible for so much of the gap between aspirations and actual results. Management is often a 'neglected factor' in the preparation of plans and projects, and it tends to attract less attention than the substantive content of development in research and evaluation efforts" (p.1). Although narrowly conceived, the study gives a kaleidoscopic account of the management process involved in the actual implementation of the squatter upgrading programme.

Third World urbanization has the universal feature of squatter settlements—spontaneous and haphazard colonies mushrooming usually at the periphery of the city. Each country or city has a particular name to designate the phenomenon. Calcutta has it 'basti', Kuala Lumpur its 'Kampong' and Rio its 'favela'. The formation of these unplanned settlements is itself an interesting theme for social history. The settlements have their own culture, economy, politics and even government.

Unplanned growth of the squatter settlements has not received much of governmental attention until recently. Government does not belong to the squatters. So, the usual local government response to the problem has been one of eviction and clearance in order that the sanitation of the city can be safeguarded.

Today in most third world countries, the squatter problem has been engaging serious attention of the policy makers. A variety of policy responses is noticeable across the nations. The earlier method of clearance is in limited use, as it is being increasingly realized that in a situation of acute urban housing shortage the squatter settlements can be looked at as a form of low-grade housing stock, catering to the needs of a large group who are squeezed out of the conventional urban housing market. What these unplanned settlements need very badly are the essential infrastruc-

tural facilities and social overheads such as water supply, roads, sewerage and drainage, education, and dispensaries. The facilities have not reached them as they live beyond the limits of an enclave 'civilization'. Another policy offshoot has been the site and services programme under which minimum essential facilities are provided in designated areas. A sort of planned squatting is being encouraged in a relatively healthy environment.

Two other responses to the squatter phenomenon deserve special mention. The contributions of the squatter population to the urban economy are not insignificant. They are subsumed in the large informal sector of the economy which is currently engaging the attention of urban planners. The second policy response has been toward utilizing the innate strength of the squatter colonies to rebuild the settlements. Since allocation of resources to the improvement of squatter areas does not always materialize due to general resource constraints and political attitudes, 'self-help' programmes have been advocated and implemented in many instances tapping the resources of the squatters themselves.

The present study is basically focussed on squatter upgrading. The project that was taken up for intensive investigation provides services and housing improvement opportunities to about 18,000 houses in Lusaka's three largest squatter complexes with a population of 130,000. This represents two-thirds or more of the city's squatter population or one-third of the city's total population of about 400,000 as of 1974.

Multiplicity of agencies and fragmentation of government are universal features of urban governance. Lusaka is no exception to this common rule. Provision of infrastructure and civic services is chiefly the responsibility of the elected city council. The central ministries and public corporations have their respective roles in administering certain services such as education, curative health, and public transport. The Central Ministry of Local Government and Housing has, under its aegis, the National Housing Authority. The Department of Lands has within it a Squatter Control Unit. Despite so many 'governments', the squatter settlements were treated as 'unauthorized areas' outside the orbit of formal government. To quote the author:

However successful were the activities of the Council and central agencies in the urban area of Lusaka, they were directed almost entirely at the 'formal' areas of the city Services were only provided in the unauthorised areas on a very patchy basis in response to ad hoc pressure or crises, and nowhere were they provided comprehensively or to the standards of the recognized areas. Advance was constrained by a variety of factors: the legal status of the settlements, the attitudes of professionals, councillors and national politicians to urban housing and infrastructure standards, ignorance of the areas,

(metaphorically and in some cases even literally they were 'off the map'), and shortage of resources.

Under the circumstances, the squatter settlements evolved their own government. It is the party system that took over the mantle of government. Apart from its overtly political role of recruiting members and disseminating party ideology, the party organization was involved in the provision of infrastructure and community services, allocation of plots and enforcement of building control, and maintenance of law and order within the settlements. To quote the researcher's observation:

Decisions may be imposed, elections are not always democratic, or there may be preoccupation with petty rivalries. But it is clear that the party was involved constructively in much more than political activities: it was involved in development. Through the party the community possessed its own machinery and leadership for development (p.13).

It is against this background of local leadership and political homogeneity that the ubiquitous World Bank emerges as the change agent! In collaboration with the Zambian Government, the squatter upgrading programme is launched at a cost of \$ 41.2 million.

Money breeds organization. The next step is naturally to create an organization to 'manage' the programme. Within the umbrella of the Lusaka City Council, a special project organization was set up—the Housing Project Unit—with a Project Director, a Deputy Project Director and three chiefs respectively in charge of engineering services, finance and procurement, and social services. The special organization enjoyed considerable autonomy and was in direct communication with the City Council's principal policy making Committee—the Finance and General Purposes Committee. At the three projects sites, three field teams were constituted to oversee the operation on the ground and inform the 'headquarter' about the progress of work. Elaborate staffing arrangements were made which the present study reports very meticulously. Key management functions securely rested with the professional specialists. A special cadre of community development officers was created to do the 'extension' work for the project.

For advice and supervision for self-help housebuilding, another cadre of Construction Advisers was formed.

The American Friends Services Committee provided a Community Involvement Expert. The UNICEF contributed staff to the CD training programme and equipments to Project Support Communications Section. There was an Evaluation Team jointly financed by the World Bank and the International Development Research Centre (Canada).

A high-powered organization blessed with World Bank funds and

attention, and fortunate enough to receive staff, equipments and expert advice from various international organizations has necessarily to succeed. The organization had made liberal use of all conceivable management techniques such as network analysis, extension technology, coordinating mechanisms, reporting techniques, monitoring and evaluation. The author has no doubt made a heroic effort to capture in all its detail the management dynamics of the programme. For a squatter management practitioner, the study will prove an invaluable handbook.

Overwhelmed, perhaps, by the organizational structure and the elaborate management drill, the author comes out with an 'impression' that HPU has achieved a creditable degree of success (p. 135). It seems he has fallen a prey to the common belief that management is the *sine qua non* of development. The 'cost' of management in this particular project is anybody's guess. Its replication in other situations may be beyond the financial capacity of most governments. It had the additional distinction of being a prestigious World Bank project to which all attention was attracted. How does one buy such attention in normal squatter settlements programmes?

More fundamentally, however, how does one measure 'success', if it has to be more than 'impression'? A client oriented project depends for its success on clientele satisfaction. What were the reactions of the squatter households to the operation of the programme? Whatever little evidence one can scrape from the appendices at the end of the study seem to suggest that all was not well with 'management'. In one overspill resettlement area (Appendix 9.4), 59 per cent of the participants felt that transportation to the overspill areas was a problem; 30 per cent felt that they were forced to move; 45 per cent did not like to move because of the inadequacy of the temporary shelter; and 25 per cent felt that they were made to move when the weather was too cold. As regards materials procurement from the stores, 62 per cent rated the stores operations either as bad or poor. Most of the participants (80 per cent) felt that the loans granted to them for the core house were not sufficient, and they had to look for other sources of funding to complete their houses.

So much noise was created for self-help for which a separate cadre of construction advisers was formed. But one survey points out that only 12 per cent of the households in the overspill areas built their own houses (p. 215).

It is not clear from the study if a systematic client-survey was conducted after the completion of the project. Hence 'success' remains an elusive concept. What baffles imagination is: when the squatter settlements were politically fairly homogeneous and the settlers had the machinery and motivation to upgrade their living conditions, wherein lies the logic of creating a multi-million dollar organization with its built-in managerial sophistry? The question that remains unanswered is that is it the best way

to 'manage' the squatter upgrading programme? This, of course, raises the more fundamental issue of what outcome is expected out of management. In the wider context of urban deprivation, mass consciousness and mass mobilization might be a preferable objective in order to sustain a continuous popular movement to better living conditions. An externally induced and elite-managed programme may not yield such results. When the honeymoon of management sophistication would be over and the 'upgraded' areas would have to be maintained in a routine fashion, isn't there a prospect of their slumping down into degraded areas? The future will judge if the project was a success or not, and if similar highpowered organization could be set up in fairly identical situations.

All in all, the value of the book lies in the presentation of a photographic description of the management process and in numerous cues for further research in this important area of urban studies. This is perhaps the first work of its kind that offers a detailed account of how project implementation actually takes place on the ground. If one is interested in knowing the 'doing' part of the job, as administrators and trainers would obviously like to know, this monograph will undoubtedly be of great practical help.

—MOHIT BHATTACHARYA

Distribution and Differential Location of Public Utilities in Urban Delhi, GIRISH K. MISRA AND K.S.R.N. SARMA, IIPA, New Delhi, 1979, pp. 456, Rs. 125.

The book is divided in three sections. The first part deals with the necessary theoretical underpinning, the second part contains the field study and the last one operates on future strategies for planning and development.

The first part dealing with the theoretical underpinning considerably covers the relevant literature available in this field and as such brings out a very distinct argument for detailed studies of utilities and services as a part of study of complex urban systems in the metropolitan areas with reference to Delhi. It covers the relevant case studies as well as findings of world bodies related to distribution and availability of utilities and services at the metropolitan level. This part also includes various aspects related to the affordability of the services and the actual services available at the users end. However, at one point, when the authors try to relate the income of residents of Delhi with the level of services available to them in various parts of Delhi, they refer to a series of information compiled by P.B. Desai, *et al.*, referring to a survey carried out by them in 1957. This reference seems to be out of context with the present level of services and their distribution in the metropolitan areas of Delhi.

The second part deals with the analysis and compilation of field infor-

mation supported by elaborate appendices, but most of the time this elaborate information concentrates on the availability aspect of the utilities and services and the related problems. While there is a very little discussion on the suitability of the network systems vis-a-vis the proposed urban system as intended through the Delhi Master Plan and its deliberations on Land-use Plan. This is further aggravated when the sample data points out the distribution of services in terms of physical location with respect to land uses. Although the authors mention in the first part that there are certain types of utilities and services which must be considered as social services and must be provided by the government in conjunction with affordability of the population, extending the concept of minimum needs but, later on, when it comes to the third part, *i.e.*, strategies for development, it seems over-emphasis has been laid on the revision of tax structure for utilities and services as a probable remedy rather than finding out the areas of deficiency in the networks and delivery system. This situation overplays the need of taxation on the face of inefficiency and unsystematic delivery of services at the users end which must be a foremost and serious consideration when compared with other problems in the metropolitan areas of Delhi.

However, the book for the first time brings together various aspects related to distribution of utilities and services in the metropolitan structure and tries to relate them with the organizational and the administrative structure existing in the metropolitan area. It also focuses on the need of a detailed and analytical study for establishing not only norms and standards, but procedure for implementation of well-known objectives related to distribution of utilities and services in a metropolitan structure.

As such the effort made by Dr. Misra and Dr. Sarma is praiseworthy for bringing out certain vital issues in focus through their treatise on Distribution and Differential Location of Public Utilities in Urban Delhi.

—M.N. CHATTERJI

Habitat Management

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